



This electronic version (PDF) was scanned by the International Telecommunication Union (ITU) Library & Archives Service from an original paper document in the ITU Library & Archives collections.

La présente version électronique (PDF) a été numérisée par le Service de la bibliothèque et des archives de l'Union internationale des télécommunications (UIT) à partir d'un document papier original des collections de ce service.

Esta versión electrónica (PDF) ha sido escaneada por el Servicio de Biblioteca y Archivos de la Unión Internacional de Telecomunicaciones (UIT) a partir de un documento impreso original de las colecciones del Servicio de Biblioteca y Archivos de la UIT.

(ITU) للاتصالات الدولي الاتحاد في والمحفوظات المكتبة قسم أجراه الضوئي بالمسح تصوير نتاج (PDF) الإلكترونية النسخة هذه والمحفوظات المكتبة قسم في المتوفرة الوثائق ضمن أصلية ورقية وثيقة من نقلًا.

此电子版（PDF版本）由国际电信联盟（ITU）图书馆和档案室利用存于该处的纸质文件扫描提供。

Настоящий электронный вариант (PDF) был подготовлен в библиотечно-архивной службе Международного союза электросвязи путем сканирования исходного документа в бумажной форме из библиотечно-архивной службы МСЭ.



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

BLUE BOOK

VOLUME II – FASCICLE II.4

TELEGRAPH AND MOBILE SERVICES OPERATIONS AND QUALITY OF SERVICE

RECOMMENDATIONS F.1-F.140



IXTH PLENARY ASSEMBLY
MELBOURNE, 14-25 NOVEMBER 1988

Geneva 1989



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

BLUE BOOK

VOLUME II – FASCICLE II.4



TELEGRAPH AND MOBILE SERVICES OPERATIONS AND QUALITY OF SERVICE

RECOMMENDATIONS F.1-F.140



IXTH PLENARY ASSEMBLY
MELBOURNE, 14-25 NOVEMBER 1988

Geneva 1989

ISBN 92-61-03281-8

**CONTENTS OF THE CCITT BOOK
APPLICABLE AFTER THE NINTH PLENARY ASSEMBLY (1988)**

BLUE BOOK

Volume I

- FASCICLE I.1 – Minutes and reports of the Plenary Assembly.
List of Study Groups and Questions under study.
- FASCICLE I.2 – Opinions and Resolutions.
Recommendations on the organization and working procedures of CCITT (Series A).
- FASCICLE I.3 – Terms and definitions. Abbreviations and acronyms. Recommendations on means of expression (Series B) and General telecommunications statistics (Series C).
- FASCICLE I.4 – Index of Blue Book.

Volume II

- FASCICLE II.1 – General tariff principles – Charging and accounting in international telecommunications services. Series D Recommendations (Study Group III).
- FASCICLE II.2 – Telephone network and ISDN – Operation, numbering, routing and mobile service. Recommendations E.100-E.333 (Study Group II).
- FASCICLE II.3 – Telephone network and ISDN – Quality of service, network management and traffic engineering. Recommendations E.401-E.880 (Study Group II).
- FASCICLE II.4 – Telegraph and mobile services – Operations and quality of service. Recommendations F.1-F.140 (Study Group I).
- FASCICLE II.5 – Telematic, data transmission and teleconference services – Operations and quality of service. Recommendations F.160-F.353, F.600, F.601, F.710-F.730 (Study Group I).
- FASCICLE II.6 – Message handling and directory services – Operations and definition of service. Recommendations F.400-F.422, F.500 (Study Group I).

Volume III

- FASCICLE III.1 – General characteristics of international telephone connections and circuits. Recommendations G.100-G.181 (Study Groups XII and XV).
- FASCICLE III.2 – International analogue carrier systems. Recommendations G.211-G.544 (Study Group XV).
- FASCICLE III.3 – Transmission media – Characteristics. Recommendations G.601-G.654 (Study Group XV).
- FASCICLE III.4 – General aspects of digital transmission systems; terminal equipments. Recommendations G.700-G.795 (Study Groups XV and XVIII).
- FASCICLE III.5 – Digital networks, digital sections and digital line systems. Recommendations G.801-G.961 (Study Groups XV and XVIII).

- FASCICLE III.6 – Line transmission of non-telephone signals. Transmission of sound-programme and television signals. Series H and J Recommendations (Study Group XV).
- FASCICLE III.7 – Integrated Services Digital Network (ISDN) – General structure and service capabilities. Recommendations I.110-I.257 (Study Group XVIII).
- FASCICLE III.8 – Integrated Services Digital Network (ISDN) – Overall network aspects and functions, ISDN user-network interfaces. Recommendations I.310-I.470 (Study Group XVIII).
- FASCICLE III.9 – Integrated Services Digital Network (ISDN) – Internetwork interfaces and maintenance principles. Recommendations I.500-I.605 (Study Group XVIII).

Volume IV

- FASCICLE IV.1 – General maintenance principles: maintenance of international transmission systems and telephone circuits. Recommendations M.10-M.782 (Study Group IV).
- FASCICLE IV.2 – Maintenance of international telegraph, phototelegraph and leased circuits. Maintenance of the international public telephone network. Maintenance of maritime satellite and data transmission systems. Recommendations M.800-M.1375 (Study Group IV).
- FASCICLE IV.3 – Maintenance of international sound-programme and television transmission circuits. Series N Recommendations (Study Group IV).
- FASCICLE IV.4 – Specifications for measuring equipment. Series O Recommendations (Study Group IV).

- Volume V** – Telephone transmission quality. Series P Recommendations (Study Group XII).

Volume VI

- FASCICLE VI.1 – General Recommendations on telephone switching and signalling. Functions and information flows for services in the ISDN. Supplements. Recommendations Q.1-Q.118 *bis* (Study Group XI).
- FASCICLE VI.2 – Specifications of Signalling Systems Nos. 4 and 5. Recommendations Q.120-Q.180 (Study Group XI).
- FASCICLE VI.3 – Specifications of Signalling System No. 6. Recommendations Q.251-Q.300 (Study Group XI).
- FASCICLE VI.4 – Specifications of Signalling Systems R1 and R2. Recommendations Q.310-Q.490 (Study Group XI).
- FASCICLE VI.5 – Digital local, transit, combined and international exchanges in integrated digital networks and mixed analogue-digital networks. Supplements. Recommendations Q.500-Q.554 (Study Group XI).
- FASCICLE VI.6 – Interworking of signalling systems. Recommendations Q.601-Q.699 (Study Group XI).
- FASCICLE VI.7 – Specifications of Signalling System No. 7. Recommendations Q.700-Q.716 (Study Group XI).
- FASCICLE VI.8 – Specifications of Signalling System No. 7. Recommendations Q.721-Q.766 (Study Group XI).
- FASCICLE VI.9 – Specifications of Signalling System No. 7. Recommendations Q.771-Q.795 (Study Group XI).
- FASCICLE VI.10 – Digital subscriber signalling system No. 1 (DSS 1), data link layer. Recommendations Q.920-Q.921 (Study Group XI).

- FASCICLE VI.11 – Digital subscriber signalling system No. 1 (DSS 1), network layer, user-network management. Recommendations Q.930-Q.940 (Study Group XI).
- FASCICLE VI.12 – Public land mobile network. Interworking with ISDN and PSTN. Recommendations Q.1000-Q.1032 (Study Group XI).
- FASCICLE VI.13 – Public land mobile network. Mobile application part and interfaces. Recommendations Q.1051-Q.1063 (Study Group XI).
- FASCICLE VI.14 – Interworking with satellite mobile systems. Recommendations Q.1100-Q.1152 (Study Group XI).

Volume VII

- FASCICLE VII.1 – Telegraph transmission. Series R Recommendations. Telegraph services terminal equipment. Series S Recommendations (Study Group IX).
- FASCICLE VII.2 – Telegraph switching. Series U Recommendations (Study Group IX).
- FASCICLE VII.3 – Terminal equipment and protocols for telematic services. Recommendations T.0-T.63 (Study Group VIII).
- FASCICLE VII.4 – Conformance testing procedures for the Teletex Recommendations. Recommendation T.64 (Study Group VIII).
- FASCICLE VII.5 – Terminal equipment and protocols for telematic services. Recommendations T.65-T.101, T.150-T.390 (Study Group VIII).
- FASCICLE VII.6 – Terminal equipment and protocols for telematic services. Recommendations T.400-T.418 (Study Group VIII).
- FASCICLE VII.7 – Terminal equipment and protocols for telematic services. Recommendations T.431-T.564 (Study Group VIII).

Volume VIII

- FASCICLE VIII.1 – Data communication over the telephone network. Series V Recommendations (Study Group XVII).
- FASCICLE VIII.2 – Data communication networks: services and facilities, interfaces. Recommendations X.1-X.32 (Study Group VII).
- FASCICLE VIII.3 – Data communication networks: transmission, signalling and switching, network aspects, maintenance and administrative arrangements. Recommendations X.40-X.181 (Study Group VII).
- FASCICLE VIII.4 – Data communication networks: Open Systems Interconnection (OSI) – Model and notation, service definition. Recommendations X.200-X.219 (Study Group VII).
- FASCICLE VIII.5 – Data communication networks: Open Systems Interconnection (OSI) – Protocol specifications, conformance testing. Recommendations X.220-X.290 (Study Group VII).
- FASCICLE VIII.6 – Data communication networks: interworking between networks, mobile data transmission systems, internetwork management. Recommendations X.300-X.370 (Study Group VII).
- FASCICLE VIII.7 – Data communication networks: message handling systems. Recommendations X.400-X.420 (Study Group VII).
- FASCICLE VIII.8 – Data communication networks: directory. Recommendations X.500-X.521 (Study Group VII).

- Volume IX** – Protection against interference. Series K Recommendations (Study Group V). Construction, installation and protection of cable and other elements of outside plant. Series L Recommendations (Study Group VI).

Volume X

- FASCICLE X.1** – Functional Specification and Description Language (SDL). Criteria for using Formal Description Techniques (FDTs). Recommendation Z.100 and Annexes A, B, C and E, Recommendation Z.110 (Study Group X).
 - FASCICLE X.2** – Annex D to Recommendation Z.100: SDL user guidelines (Study Group X).
 - FASCICLE X.3** – Annex F.1 to Recommendation Z.100: SDL formal definition. Introduction (Study Group X).
 - FASCICLE X.4** – Annex F.2 to Recommendation Z.100: SDL formal definition. Static semantics (Study Group X).
 - FASCICLE X.5** – Annex F.3 to Recommendation Z.100: SDL formal definition. Dynamic semantics (Study Group X).
 - FASCICLE X.6** – CCITT High Level Language (CHILL). Recommendation Z.200 (Study Group X).
 - FASCICLE X.7** – Man-Machine Language (MML). Recommendations Z.301-Z.341 (Study Group X).
-

CONTENTS OF FASCICLE II.4 OF THE BLUE BOOK

Series F Recommendations

Telegraph and Mobile Services: Operations and Quality of Service

Rec. No.		Page
Res. No. 13	Protection of the common names of CCITT defined international public services	3
SECTION 1 — <i>Operating methods for the international public telegram service</i>		
F.1	Operational provisions for the international public telegram service	5
F.4	Plain and secret language	59
F.10	Character error rate objective for telegraph communication using 5-unit start-stop equipment	61
SECTION 2 — <i>The gentex network</i>		
F.20	The international gentex service	63
F.21	Composition of answer-back codes for the international gentex service	67
F.23	Grade of service for long-distance international gentex circuits	70
F.24	Average grade of service from country to country in the gentex service	70
SECTION 3 — <i>Message switching</i>		
F.30	Use of various sequences of combinations for special purposes	71
F.31	Telegram retransmission system	72
F.35	Provisions applying to the operation of an international public automatic message switching service for equipments utilizing the international telegraph Alphabet No. 2 . .	83

SECTION 4 — *Tariffs and accounting methods for the international public telegram service*

F.41	Operational provisions for participation in the transferred account telegraph and telematic service	91
F.42	Operational provisions for the collection of telegram charges	96

SECTION 5 — *Telemessage*

F.50	International public telemessage service	97
F.51	Interworking between the telemessage service and the international public telegram service	107

SECTION 6 — *Telex*

F.60	Operational provisions for the international telex service	109
F.61	Operational provisions relating to the chargeable duration of a telex call	126
F.62	Duplex operation in the telex service	127
F.63	Additional facilities in the international telex service	127
F.64	Determination of the number of international telex circuits required to carry a given volume of traffic	129
F.65	Time-to-answer by operators at international telex positions	134
F.68	Establishment of the automatic intercontinental telex network	134
F.69	Plan for telex destination codes	139
F.70	Evaluating the quality of the international telex service	146
F.71	Interconnection of private teleprinter networks with the telex network	149
F.72	International telex store and forward — general principles and operational aspects . . .	151
F.73	Operational principles for communication between terminals on telex networks and data terminal equipment on packet switched public data networks	169
F.74	Operational provisions relating to mailbox devices connected to the telex network . . .	174
F.75	Message holding services; Intercommunication between the IPM service and the telex service	176

SECTION 7 — *Phototelegraph services*

F.80	Operational provisions for phototelegrams	177
F.80 bis	Operational provisions for private phototelegraph calls	179
F.82	Rules for phototelegraph calls established over circuits normally used for telephone traffic	180
F.85	Operating rules for international phototelegraph calls to multiple destinations	183

Rec. No.		Page
SECTION 8 — <i>Statistics and publications on international telegraph services</i>		
F.91	General statistics for the telegraph services	187
F.92	Service codes	188
F.93	Routing table for offices connected to the gentex service	190
F.95	Table of international telex relations and traffic	191
F.96	List of destination indicators	193
SECTION 9 — <i>Scheduled and leased communication services</i>		
F.100	Scheduled radiocommunication service	195
SECTION 10 — <i>Maritime mobile and mobile satellite services</i>		
F.110	Operational provisions for the maritime mobile service	197
F.112	Quality objectives for 50-baud start-stop telegraph transmission in the maritime mobile-satellite service	217
F.120	Ship station identification for VHF/UHF and maritime mobile-satellite services	217
F.122	Operational procedures for the maritime satellite data transmission service	222
F.125	Telex numbering plan for the mobile-satellite services of INMARSAT	230
F.126	Selection procedures for the INMARSAT mobile-satellite telex service	238
F.127	Operational procedures for interworking between the telex service and the service offered by INMARSAT standard-C system	249
F.130	Maritime answer-back codes	252
F.131	Radiotelex service codes	253
F.140	Point-to-multipoint telecommunication service via satellite	254
SECTION 11 — <i>Supplements to the Series F Recommendations</i>		
Supplement No. 1	Definitions relating to telegraph, telematic and data transmission services	259
Supplement No. 2	Terms and definitions for telex	270
Supplement No. 3	Outline description of the INMARSAT standard-C system and the services it may support	278

MODIFICATIONS TO THE F-SERIES

1 *Fascicle II.4*

1.1 The following new Recommendations and Supplements did not appear in Fascicle II.4 of the *Red Book* and were developed during the 1985-1988 Study Period;

Recommendations

F.4	F.75 (the same as F.421, the text is
F.50	found in fascicle II.6)
F.51	F.125
F.73	F.126
F.74	F.127
	F.140

Supplements

No. 2
No. 3

1.2 The following Recommendations and Supplements in fascicle II.4 of the *Red Book* were revised during the 1985-1988 Study Period:

Recommendations

F.1	F.71
F.30	F.72
F.31	F.80
F.41	F.80 <i>bis</i>
F.42	F.85
F.60	F.110
F.61	F.120
F.70	F.122

Supplement

No. 1

1.3 The following Recommendations have been transferred to the D-series Recommendations and no longer appear in Fascicle II.4 of the *Blue Book*:

Recommendations

F.43	F.67
F.45	F.83
F.66	F.111

1.4 The following Recommendations have been deleted from the F-series and no longer appear in the *Blue Book*:

Recommendations

F.2¹⁾
F.79¹⁾
F.121

1.5 The number of Recommendation F.150 has been changed to F.35, and now appears in Section 3 of Fascicle II.4.

¹⁾ See instead Recommendation C.3 *Instructions for international telecommunication services*, Volume I, *Blue Book*.

2 *Fascicle II.5*

2.1 The following new Recommendations did not appear in Fascicle II.5 of the *Red Book* and were developed during the 1985-1988 Study Period:

Recommendations

F.171	F.353
F.202	F.600
F.203	F.601
F.220	F.710
F.230	F.721
F.351	F.730

2.2 The following Recommendations in Fascicle II.5 of the *Red Book* were revised during the 1985-1988 Study Period:

Recommendations

F.160	F.184 (new number, formerly F.161)
F.162	F.190
F.170	F.200
F.180	F.201
F.182 (new number, formerly § 5 of Rec. F.180)	F.300

3 *New Fascicle II.6*

Fascicle II.6 is a new fascicle in the F-series and contains the following new Recommendations developed during the 1985-1988 Study Period:

Recommendations

F.400	F.420
F.401	F.421 (F.75)
F.410	F.422
F.415	F.500

PRELIMINARY NOTES

1 The Questions entrusted to each Study Group for the Study Period 1989-1992 can be found in Contribution No. 1 to that Study Group.

2 In this Fascicle, the expression "Administration" is used for shortness to indicate both a telecommunication Administration and a recognized private operating agency.

FASCICLE II.4

Series F Recommendations

TELEGRAPH AND MOBILE SERVICES: OPERATIONS AND QUALITY OF SERVICE

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

**PROTECTION OF THE COMMON NAMES OF
CCITT DEFINED INTERNATIONAL PUBLIC SERVICES**

Resolution No. 13 published in Volume I is reproduced below for the convenience of the reader.

Resolution No. 13

**PROTECTION OF THE COMMON NAMES OF CCITT DEFINED
INTERNATIONAL PUBLIC SERVICES**

The CCITT,

considering

- (a) that CCITT has defined, *inter alia*, the international public services "teletex", "telefax" and "bureaufax" in Service Recommendations;
- (b) that those international public services are characterized by complete end-to-end compatibility;
- (c) that it is desirable to use on a worldwide basis for those CCITT defined international public services their respective common name, i.e. "teletex", "telefax" or "bureaufax", to qualify any service provided in that respect as complying completely with the CCITT definitions for the respective international public service in order to guarantee end-to-end compatibility;
- (d) that it is essential to protect the use of the aforementioned common names;

noting

- (a) that within a number of countries, several Recognized Private Operating Agencies (RPOAs) may provide such CCITT defined international public services and may also wish to add further optional user facilities in addition to the respective basic international public service as defined by the CCITT;
- (b) that, for the preceding reason, some RPOAs may wish to use service designations, e.g. XXX/teletex, indicating a combination of a basic international public service as defined by the CCITT with additional optional user facilities;

resolves to request Administrations

- (1) to ensure that any such international public service offered by an Administration be denominated by its respective common name, i.e. "teletex", "telefax" or "bureaufax" and comply completely with the respective CCITT definitions for such service;

(2) to endeavour to protect the common names of the CCITT defined international public services "teletex", "telefax" and "bureaufax", *inter alia* through the communication of those names to the national, regional and international authorities for the registration and administration of trade marks and service marks in order to ensure that the said names be not made the subject of trade marks or service marks or if claimed in an application for the registration of trade marks or service marks be made the subject of a disclaimer;

(3) to ensure that in the case of a combination of any such CCITT defined international public services together with further optional user facilities in addition to that basic service, the trade mark or the service mark for such a combined service offered by any RPOA be always combined with the respective common name of the basic CCITT defined international public service, i.e. "teletex", "telefax" or "bureaufax", and that the latter names, in the case of registration of such a trade mark or service mark, be made the subject of a disclaimer;

(4) to inform the Director of the CCITT continuously about the measures taken with regard to resolves (1) to (3) above;

requests the Director of the CCITT

to compile the information received in respect of such measures and to make this information available on request for consultation by Administrations.

SECTION 1

OPERATING METHODS FOR THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

Recommendation F.1

OPERATIONAL PROVISIONS FOR THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

SUMMARY

- Division A – General provisions applying to all methods of working
- Division B – Operational provisions applying to Morse and sounder working
- Division C – Operational provisions applying to printing telegraph systems
- Division D – Telegraph service correspondence

Introductory notes

- 1 Telegram examples given in this Recommendation are only intended to illustrate the correct formatting of telegrams. Groups such as gentex answer-back codes, channel indicators, telegram identification groups, destination indicators, origin indicators and postal codes do not necessarily reflect current usage or routing arrangements in the telegraph offices concerned.
- 2 Letters, figures and signs that are transmitted electrically are shown in bold font: **TLX420216**.
- 3 In accordance with Recommendation C.3, the IXth Plenary Assembly of the CCITT decided that the provisions in this Recommendation should enter into force at 0001 UTC on 1 January 1989.
- 4 However, the Plenary Assembly also agreed that those Administrations who accept the optional class of postal financial services telegrams (POSTFIN) should, wherever possible and, if necessary, after bilateral agreements, continue to apply the operational procedures laid down in the *Red Book* (1984) version for that class of telegram until 1 July 1990.¹⁾

¹⁾ Date to be confirmed by Washington Congress of the UPU, November 1989.

DIVISION A

GENERAL PROVISIONS APPLYING TO ALL METHODS OF WORKING

I. Hours of service of offices

- 1 Duration and closing of service — Legal time

II. Classification of correspondence in the international public telegram service

- 1 Telegrams and special services
 - 1.1 Obligatory telegrams
 - 1.2 Optional telegrams and special services

III. Preparation and handing in of telegrams

- 1 General
- 2 Characters that may be used for the preparation of telegrams
- 3 Order of arrangement of the various parts of a telegram
- 4 Heading
- 5 The address part
 - 5.1 The service indications
 - 5.2 General provisions for the address
 - 5.3 Full postal address
 - 5.4 Registered address
 - 5.5 Telephonic address
 - 5.6 Telex, teletex and facsimile addresses
 - 5.7 *Poste restante* or *telegraphe restant* address
 - 5.8 Post office box address
- 6 The text part
 - 6.1 The text
 - 6.2 The signature
 - 6.3 Long telegrams
- 7 Cancellation of telegrams at the request of the sender

IV. Counting of words

- 1 General provisions
- 2 Counting the number of chargeable words
- 3 Indication of the number of the words in the preamble line
- 4 Irregularities in the counting of words

V. Routing and retransmission of telegrams

VI. Transmission of telegrams

- 1 Order of transmission of telegrams
- 2 Order of transmission of the various parts of a telegram
- 3 Transmission of the heading
- 4 Transmission of the other parts of a telegram
- 5 Reception
- 6 Errors and interruptions

VII. Interruption of telegram communications

- 1 Diversion of telegrams

VIII. Delivery at destination

- 1 General provisions
- 2 Methods of delivery
- 3 Non-delivery and delayed delivery

IX. Obligatory telegrams

- 1 Telegrams relating to the safety of life (SVH)
- 2 Government telegrams and telegrams relative to the application of the United Nations Charter
- 3 Telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949
- 4 Ordinary private telegrams
- 5 Telegraph service correspondence
- 6 Meteorological telegrams

X. Optional telegrams

- 1 Postal financial telegrams
- 2 Letter telegrams
- 3 Privilege telegrams

XI. Special services

- 1 General provisions
- 2 Urgent transmission and delivery
- 3 De luxe form

XII. Stoppage of telegrams

- 1 Transmission of certain telegrams as of right — Notification of stoppage

XIII. Archives

- 1 Archives
- 2 Inspection of original forms of telegrams — Supplying copies of telegrams

DIVISION B

OPERATIONAL PROVISIONS APPLYING TO MORSE AND SOUNDER WORKING

I. Morse code

- 1 Morse code signals
- 2 Spacing and length of the signals
- 3 Transmission of signs for which there is no corresponding signal in the Morse code
- 4 Transmission of groups of figures and letters, of ordinal numbers or of fractions

II. General transmission rules

III. Transmission of telegrams with identical text

- 1 Identical texts

IV. Transmission irregularities — Service notes

V. Checking the number of words transmitted — Acknowledgement of receipt

- 1 Checking the number of words transmitted
- 2 Acknowledgement of receipt

VI. Transmission procedures

DIVISION C

OPERATIONAL PROVISIONS APPLYING TO PRINTING TELEGRAPH SYSTEMS

I. Transmission signals

- 1 Transmission signals of International Telegraph Alphabet No. 2
- 2 Transmission of signs for which there is no corresponding signal in the telegraph alphabet
- 3 Transmission of ordinal numbers, groups of figures and letters or of numbers that include fractions

II. General provisions for transmission of telegrams

- 1 Calling
- 2 Transmission with running series of numbers

III. General provisions for reception

IV. Special provisions for point-to-point operations

- 1 Transmission of telegrams to tape-printing systems
- 2 Transmission of telegrams to page-printing systems
- 3 Reception

V. Special provisions for gentex operations

- 1 General provisions
- 2 Answer-back codes
- 3 Responsibility of transmitting or receiving stations
- 4 Procedures before transmission of a telegram
- 5 Transmission of telegrams
- 6 Reception of telegrams
- 7 Abnormal conditions before transmission
- 8 Abnormal conditions during transmission
- 9 Traffic between gentex offices equipped with page-printing teleprinters
- 10 Interworking between tape-printing and page-printing teleprinters
- 11 Special transmission procedures for use with format converters and/or automatic error correction devices
- 12 Service advices (A) and use of codes

VI. Interworking between the telegram retransmission system and the gentex network

DIVISION D

TELEGRAPH SERVICE CORRESPONDENCE

I. Telegraph service correspondence

1 Definitions

II. Service telegrams and service advices

1 General provisions

2 Service telegrams

3 Service advices

3.1 General provisions

3.2 Procedure

3.3 Wording

3.4 Charging of service advices

3.5 Repetition of a telegram

III. Examples of format and wording of service correspondence

DIVISION A

GENERAL PROVISIONS APPLYING TO ALL METHODS OF WORKING

I. Hours of service of offices

1 Duration and closing of service – Legal time

- A1 1.1 Each Administration shall fix the hours during which its offices shall be open for international service.
- A2 1.2 International communications established between important offices shall, so far as practicable, work without interruption.
- A3 1.3 In relations between offices that are permanently open, the closing of daily sessions shall take place at a time agreed upon between the offices concerned.
- A4 1.4 In relations between offices that are not permanently open, a terminal office may not close before having exchanged all outstanding international telegrams with an office that is open later and before having obtained confirmation that all telegrams have been received.
- A5 1.5 Between two directly communicating offices in different countries, close of work may take place only by agreement between these offices. If these offices have different hours of closing, the office that closes earlier shall request the close of work. If they have the same closing time, the close of work shall be requested by the office of the country, the capital of which has a longitude to the east of the other capital.
- A6 1.6 Offices shall use the legal time of their country or of their zone.

II. Classification of correspondence in the international public telegram service

1 Telegrams and special services

1.1 *Obligatory telegrams*

- A7 1.1.1 The following classes of telegrams shall be accepted in the international public telegram service (for the application of service indications, see A39 to A45):

Telegrams relating to the safety of life

Telegrams relative to the application of the United Nations Charter

Government telegrams

Meteorological telegrams

Telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949

Ordinary private telegrams

Service telegrams or advices

SERVICE INDICATION

SVH

ETATPRIORITE

ETAT or ETATPRIORITE

OBS

RCT

A

1.2 *Optional telegrams and special services*

A8 1.2.1 Administrations have the option of admitting the telegrams listed in A10 and telegrams with the special services listed in A11.

A9 1.2.2 However, Administrations that do not admit the telegrams listed in A10 and/or telegrams with the special services listed in A11 in their own services, must let them pass in transit except in case of suspension of service provided for in Article 20 of the Convention (Nairobi, 1982 [2]).

A10 1.2.3 *Optional telegrams*

Postal financial services telegrams

Letter telegrams

Government letter telegrams

Privilege telegrams

SERVICE INDICATION

POSTFIN

LT

LTF

CONFERENCE

A11 1.2.4 *Special services*

Urgent transmission and delivery

De luxe form

De luxe form of condolence

Period of retention of radiotelegrams at land stations

Telephone delivery

Telex delivery

Teletex delivery

Facsimile delivery

URGENT

LX

LXDEUIL

Jx
(x = number of days)

TFx
(x = telephone number)

TLXx
(x = telex number)

TTXx
(x = teletex number)

FAXx
(x = facsimile number)

III. Preparation and handing in of telegrams

1 General

A12 1.1 In principle the text and the signature of a telegram may be written in any language (see A14 and A101).

A13 1.2 They may equally be expressed in some other form based on the use of those characters mentioned in A15 to A19, A101 to A103.

A14 1.3 Exceptionally, where Members of the ITU find it necessary not to admit private telegrams in secret language, the provisions of Recommendation F.4 shall apply. Government and service telegrams may be expressed in secret language in all relations. The French, English and Spanish languages at least shall also be admitted in all relations as plain language.

2 Characters that may be used for the preparation of telegrams

A15 2.1 The original telegram must be written in characters that are used in the country of origin and that have an equivalent in the table of telegraph signals given below:

A16 2.1.1 Letters: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z


A17 2.1.2 Figures: 1 2 3 4 5 6 7 8 9 0

A18 2.1.3 Punctuation marks and miscellaneous signs:

Full stop . . . . .	.
Comma	,
Colon or division sign	:
Question mark	?
Apostrophe	'
Cross or addition sign	+
Hyphen or dash or subtraction sign	—
Fraction bar or division sign	/
Double hyphen	=
Left-hand bracket (parenthesis)	(
Right-hand bracket (parenthesis))

A19 2.2 The cross sign (+) used as a sign of addition may be utilized in a group but not as an isolated sign.

A20 2.3 Every footnote, insertion, erasure, elimination or correction must be approved by the sender or his representative.

A21 2.4 As some expressions such as 30^a, 30^{me}, 1^o, 2^o, , cannot be reproduced by all instruments, senders must substitute an equivalent that can be telegraphed; thus, for example, for the expressions quoted above: 30 POWER A (or 30 A), TRENTIEME, PRIMO, SECUNDO, B IN DIAMOND, etc.

A22 2.5 However, if the expressions 30^a, 30^b, etc., 30 bis, 30 ter, etc., 30 I, 30 II, etc., 30A, 30B, etc., 30¹, 30², etc., indicating a house number, appear in the address, the accepting officer shall separate the main number from the number qualifying it, or from the accompanying letters or digits, by a fraction bar. These expressions shall consequently be transmitted in the following form in the address of a telegram: 30/A, 30/B, etc., 30/BIS, 30/TER, etc., 30/1, 30/2, etc., 30/A, 30/B, etc., 30/1, 30/2, etc.

3 Order of arrangement of the various parts of a telegram

A23 3.1 Every telegram must have a heading, which shall include the information needed for identification and, if necessary, for the routing of the telegram.

A24 3.2 The other parts of which a telegram may consist must be arranged as follows:

A25 3.2.1 the address (including the service indications, if any);

A26 3.2.2 the text (including the signature, if any);

4 Heading

A27 4.1 The heading of a telegram consists of the lines listed in A28 to A30:

A28 4.2 the *numbering line* containing the information to identify the telegram (for example the originating office number) or telegram identification group and the serial and/or reference numbers used in transmitting the telegram. The numbering of telegrams to be transmitted over international circuits depends on the particular mode of operation employed. See B55 to B66, C21 to C25 and Recommendation F.31 (§§ 2.1 to 2.3 and 5.4).

A29 4.3 the *pilot line* (where this is required) prepared in accordance with Recommendation F.31 (§§ 2.1 to 2.3 and 5.4).

A30 4.4 the *preamble line* which consists of:

A31 4.4.1 the name of the office of origin as it appears in the relevant columns of the *List of Telegraph Offices* [3]. If necessary the name of the office of origin may be suffixed by particulars intended to distinguish it from other offices of the locality. Such a suffix should be joined to the name of office of origin by a fraction bar;

Examples: **WISEU/VIRIATO**
BERLIN/19

A32 4.4.1.1 when a telegram is
a) telephoned,
b) sent in by telex,
c) sent in by teletex, or
d) sent in by facsimile.

to a telegraph office (ROSTOCK, for example) by a customer located somewhere else (WISMAR, for example), the office of origin may be transmitted as follows:

a) **ROSTOCK/TF**
b) **ROSTOCK/TLX**
c) **ROSTOCK/TTX**
d) **ROSTOCK/FAX**

A33 4.4.2 The number of chargeable and actual words (see A115 to A117).

A34 4.4.3 The date and time of handing in of the telegram. The date and time shall be shown by two groups of figures, the first indicating the day of the month and the second consisting of a group of four figures (0001 to 2400) indicating the hours and minutes (see A6).

A35 4.4.4 Service instructions, if any.

A36 4.4.4.1 A service instruction is an instruction added to a telegram by the office of origin or by another office to give additional information about the telegram.

A37 4.4.4.2 Examples of service instructions and the abbreviated form in which they may be indicated are shown in the following list:

Correction follows

CTF

Telegram sent a second time

AMPLIATION

Division of a telegram

PART/1, PART/2 ...

A38 4.4.4.3 These instructions are placed at the end of the preamble line.

5 The address part

5.1 *The service indications*

- A39 5.1.1 Service indications, if any, shall be shown separately in the first line of the address part. The service indications on a telegram:
- A40 a) identify it as within a particular class of telegram;
- A41 b) denote a special service requested by the sender.
- A42 5.1.2 Service indications may be written by the sender in full or abbreviated form. If necessary, the accepting officer shall substitute the appropriate service indications shown in A7, A10 and A11.
- A43 5.1.3 The service indications identifying the class of telegram are shown in A7 and A10.
- A44 5.1.4 If there are several service indications in a telegram, the service indication identifying class shall come first, for example **LT LX**.
- A45 5.1.5 Exceptionally the service indication **URGENT**, if present shall precede the indication of class, for example **URGENT RCT**.

5.2 *General provisions for the address*

- A46 5.2.1 The address must contain all the particulars necessary to ensure delivery of the telegram to the addressee without inquiries or requests for information. In all cases of insufficient address the telegram shall be accepted only at the risk of the sender, if he insists on sending it, and he has also to bear the consequences.
- A47 5.2.2 With three exceptions, every address, to be admissible, must contain at least two words, the first designating the addressee and the second the name of the telegraph office of destination. The exceptions are:
- A48 a) **SVH** telegrams (see A203);
- A49 b) **POSTFIN** telegrams (see A236 to A240);
- A50 c) Service advices (see D35).
- A51 5.2.3 The following categories of address are permitted:
- A52 a) full postal address;
- A53 b) registered address;
- A54 c) telephonic address;
- A55 d) telex address;
- A56 e) teletex address;
- A57 f) facsimile address;
- A58 g) *poste restante* or *telegraphe restant* address;
- A59 h) post office box address.
- A60 5.2.4 When a telegram is addressed to a person at the address of another, the address must contain, immediately after the name of the actual addressee, the expression *chez*, *care of* or other equivalent expression.
- A61 5.2.5 When the destination is not served by international communication circuits, A182 shall be observed.

- A62 5.2.6 The name of the telegraph office of destination should be placed after the words in the address that designate the addressee and where given, his residence. It should be written as it appears in the relevant columns of the *List of Telegraph Offices* [3] as the last address line.
- A63 5.2.7 If necessary this name may be suffixed by particulars intended to distinguish it from other offices of the locality. Such a suffix should be joined to the name of the office of destination by a fraction bar:
- Example: **BORDEAUX/SAINTPROJET**
- A64 5.2.8 When the name of the place given as the destination, or that of the land station chosen for the transmission of a radiotelegram, does not appear in the *List of Telegraph Offices* [3] or the *List of Coast Stations* [4], as the case may be, this name must be followed either by the name of the state, province or country or by other particulars that are considered adequate for the forwarding of the telegram. The same course shall be followed when there are several offices of the same name and the sender is not in a position to furnish definite information from which the official designation of the locality can be identified. In either case, the telegram shall be accepted only at the risk of the sender.
- A65 5.2.9 In radiotelegrams the name of the destination mobile station should be written as it appears in the appropriate ITU List, or, if not so listed, the call sign or other particulars should also be given, if necessary.
- A66 5.2.10 If the address does not conform with A47 to A50, A64 and A65, the telegram shall be refused.
- 5.3 *Full postal address*
- A67 5.3.1 The full postal address must, as a general rule, include:
- A68 a) the designation of the addressee;
- A69 b) the name of the street, boulevard, avenue, etc. of his abode together, if available, with the number;
- A70 c) the name of the office of destination.
- A71 5.3.2 The name of the telegraph office of destination should be supplemented by the postal code whenever possible placed according to the requirements of the country of destination. The postal code should be enclosed in brackets by the accepting office.
- A72 5.3.3 In the absence of the particulars mentioned in A69, the address must state, so far as possible, the occupation of the addressee or give any other useful information.
- A73 5.3.4 Even for small localities, the designation of the addressee must be supplemented, so far as possible, by further particulars for the guidance of the delivery office.
- A74 5.3.5 Surnames, given (christian) names, names of firms and particulars of abode shall be accepted as the sender writes them. Any other particulars in the address should be written in the language or languages of the destination country. The name of the office of destination should be written in accordance with the relevant columns of the *List of Telegraph Offices* [3].

A75 5.3.6 The address may thus appear as follows:

**URGENT
MRS MARIA JACINTA
C/O VITOR E COMPANHIA LIMITADA
RUA VASGO DA GAMA 232
PORTO COVO
(7520) SINES**

A76 5.3.7 In telegrams for China, the Chinese phonetic alphabet, groups of four figures or groups of three roman characters may be used to designate the name and abode of the addressee.

5.4 *Registered address*

A77 5.4.1 A registered address is one in which the full address (excluding the office of destination) is replaced by a single simplified indication.

A78 5.4.2 The address may thus appear as follows:

**INOCRAM
LISBOA**

A79 5.4.3 Such an address is registered in the destination country and represents the full address of the addressee and, if necessary, instructions for the delivery of his telegrams.

A80 5.4.4 The right to delivery of telegrams so addressed shall be subject to arrangements between the addressee and the telegraph office of destination.

A81 5.4.5 When, exceptionally, the registered address is followed by an additional indication **ATTENTION** or any other equivalent and/or the name of a third person, it should normally only be used to reconstitute the full address of the addressee.

5.5 *Telephonic address*

A82 5.5.1 If the sender desires his telegram to be delivered by telephone, the service indication **TFx** (x being the telephone number of the addressee with, if necessary, the name or access number of the network), shall be indicated before the address (the name of the addressee and the office of destination may be sufficient).

A83 5.5.2 The address may thus appear as follows:

TF873455	or	TFDEWILGEN234
WILLI SCHUTZ		DE VRIES
HAMBURG		HEERENVEEN

5.6 *Telex, teletex and facsimile addresses*

5.6.1 *Telex address*

A84 5.6.1.1 If the sender desires his telegram to be delivered by telex, the service indication **TLXx** (x being the number of the addressee's telex station), shall be indicated before the address (name of the addressee and the office of destination may be sufficient).

A85 5.6.1.2 The address may thus appear as follows:

**TLX200745
MARIE DUBOIS
PARIS**

5.6.2 Teletex address

A86 5.6.2.1 If the sender desires his telegram to be delivered by teletex, the service indication **TTXx** (x being the number of the addressee's teletex station), shall be indicated before the address (the name of the addressee and the office of destination may be sufficient).

A87 5.6.2.2 The address may thus appear as follows:

TTX437504
RUDOLF GILGEN
BERNE

5.6.3 Facsimile address

A88 5.6.3.1 If the sender desires his telegram to be delivered by facsimile, the service indication **FAXx** (x being the facsimile number of the addressee), shall be indicated before the address (the name of the addressee and the office of destination may be sufficient).

A89 5.6.3.2 The address may thus appear as follows:

FAX622266	or	FAXCAVERNAES92143
PIERRE WENGER		CARLA SOFIA
BERNE		VISEU

5.7 Poste restante, or telegraphe restant address

A90 5.7.1 The address of telegrams intended to be delivered to a *poste restante* or *telegraphe restant* must be composed of:

- A91 a) the name of the addressee including, where possible, his given (christian) name or initials;
- A92 b) the words *poste restante*, *telegraphe restant* (or the equivalent in a language of the destination country); and
- A93 c) the name of the telegraph office of destination.

A94 5.7.2 Administrations who do not admit telegrams with *poste restante* or *telegraphe restant* as part of the address shall inform other Administrations through the medium of the General Secretariat.

A95 5.7.3 Initials alone, figures, given (christian) name only, fictitious names or arbitrary signs of any kind shall not be allowed in the address.

5.8 Post office box address

A96 5.8.1 A post office box address must be composed of:

- A97 a) the name of the addressee;
- A98 b) the designation *boîte postale* (or its equivalent in a language of the destination country) followed by the box number; and
- A99 c) the name of the telegraph office of destination.

A100 5.8.2 The name of the office to which the addressee's post office box belongs should, if necessary, be supplemented by particulars to distinguish it from other local offices.

For example: **DUPONT**
BOITE POSTALE 275
PARIS/24

6 The text part

6.1 The text

- A101 6.1.1 Each telegram must contain a text that contains at least one character.
- A102 6.1.2 The text of a telegram must be continuous (no blank lines, etc.), using only the characters specified in A15 to A22.
- A103 6.1.3 When important figures or words appear in the text, it is desirable for the sender to repeat them (or the critical parts of them) in order to allow the addressee to detect possible errors in transmission. The sender may give the repetition immediately after the relevant group (followed by a space) either in brackets or preceded by the word **REPEAT**. Alternatively, figures may be spelt.

For example: **1500 (1500)**

1500 REPEAT 1500

FIFTEEN HUNDRED (1500)

PAY MR. M. KAUFNER (M. KAUFNER)

NOT REPEAT NOT

6.2 The signature

- A104 6.2.1 A signature shall not be compulsory. It may be written by the sender in any form.

6.3 Long telegrams

- A105 6.3.1 The length of the text in a telegram is normally limited to 400 actual words for transmission.
- A106 6.3.2 Except in relations where a bilateral agreement to the contrary exist, telegrams of more than 400 actual words shall be divided into separate telegrams each of 400 actual words, plus one telegram for the remainder, unless this remainder is less than 50 words.
- A107 6.3.3 This division shall be made by the Administration; it shall not be the sender's responsibility.
- A108 6.3.4 When the original telegram has been divided, the resulting telegrams shall:
- A109 6.3.4.1 be transmitted in accordance with the procedure outlined in Recommendations F.1 and F.31;
- A110 6.3.4.2 bear the special tariff indicator V. In such cases this tariff indicator will replace the tariff indicator that would have been shown if the telegram had not been divided;
- A111 6.3.4.3 contain the service instruction **PART** followed by a fraction bar and the division number (**PART/1**, **PART/2**, etc.);
- A112 6.3.4.4 bear the same telegram identification group and the same preamble line; the number of chargeable words shown in the pilot line shall be the number of chargeable words for that division of the telegram.
- A113 6.3.4.5 All parts of a divided telegram shall be transmitted to the country of destination using the same routing.

7 Cancellation of telegrams at the request of the sender

- A114 7.1 The sender of a telegram or his authorized representative may, on establishing his status and identity, cancel his telegram only if it has not been transmitted by the office of origin. After transmission has taken place, the addressee can only be notified of the cancellation of the telegram by means of another telegram from the sender.

IV. Counting of words

1 General provisions

- A115 1.1 In the counting words, a distinction shall be made between:
- A116 1.1.1 the number of actual words — each separate word, group of characters or single character that is preceded and followed by a space (or by either the start or the end of a line) shall be counted as one actual word;
- A117 1.1.2 The number of chargeable words — the provisions for counting the number of chargeable words are shown in A124 to A126.
- A118 1.2 Everything that the sender asks to have transmitted shall be chargeable, with the exception of the name of the code used for the wording of a secret language telegram, when this information is required by the origin or the destination country.
- A119 1.3 The following, however, shall not be included in the number of actual and chargeable words nor shall they be transmitted.
- A120 1.3.1 dashes used only to separate on the sender's copy the different words or groups;
- A121 1.3.2 other isolated signs, unless the sender has specifically requested their transmission.
- A122 1.4 The heading (see A30 to A44) shall not be included in the number of actual and chargeable words.
- A123 1.5 Service indications (if any) shall be included in the number of chargeable words in all chargeable telegrams and in the number of actual words in all telegrams.

2 Counting the number of chargeable words

- A124 2.1 Words, groups of characters or single characters;
- A125 2.1.1 not exceeding ten characters shall be counted as one chargeable word each;
- A126 2.1.2 exceeding ten characters shall be counted at the rate of one chargeable word for each ten characters or part thereof.

3 Indication of the number of words in the preamble line

- A127 3.1 When the number of chargeable words is the same as the number of actual words it shall be shown as a single number.
- A128 3.2 When the number of chargeable words is different from the number of actual words, both shall be shown, separated by a fraction bar. The number of chargeable words shall be shown first.

4 Irregularities in the counting of words

- A129 4.1 Except for the case of telegrams originated by a mobile station, the counting of words by the office of origin shall be decisive both for transmission and for the international accounts.
- A130 4.2 In the case of a telegram originated by a mobile station, the counting of words by the land station is decisive.
- A131 4.3 Nevertheless, a transit office or the office of destination shall be entitled to call the attention of the office of origin (or, in the case of a telegram originated by a mobile station, the land station) to counting irregularities.
- A132 4.4 A transit office may not suspend transmission of a telegram because of irregularities in the counting of words.

V. Routing and retransmission of telegrams

- A133 1.1 The routing of telegrams shall be in accordance with the routing lists for the relevant mode of operation.
- A134 1.2 In interworking between gentex telegraph offices and telegram retransmission centres, the routing of telegrams shall be in accordance with the mode of operation applied by the Administration concerned.
- A135 1.3 Each telegraph office decides by which route the telegram shall be transmitted or retransmitted.

VI. Transmission of telegrams

1 Order of transmission of telegrams

- A136 1.1 The transmission of telegrams shall take place in the following order except where technically impracticable:
- A137 1.1.1 telegrams relating to the safety of life;
- A138 1.1.2 telegrams relative to the application of the United Nations Charter;
- A139 1.1.3 government telegrams with priority;
- A140 1.1.4 meteorological telegrams;
- A141 1.1.5 ordinary private telegrams and **RCT** telegrams when urgent transmission and delivery have been requested;
- A142 1.1.6 service telegrams and service advices;
- A143 1.1.7 government telegrams, ordinary private telegrams, and **RCT** telegrams;
- A144 1.1.8 letter telegrams (including government letter telegrams).
- A145 1.2 Every office that receives, on an international circuit, a telegram presented as an **SVH** telegram, a government telegram (see also A215 and A216), a service telegram or a meteorological telegram shall forward it as such.
- A146 1.3 Except where technically impracticable, telegrams having the same priority shall be transmitted by the sending office in the order of their time of handing in, and by transit offices in the order of their time of receipt.
- A147 1.4 At transit offices, originating telegrams and transit telegrams to be transmitted over the same routes shall, except where technically impracticable, be placed together and transmitted according to the time of handing in or receipt, subject to the order laid down in A136 to A146.

2 Order of transmission of the various parts of a telegram

- A148 2.1 The various parts of a telegram shall be transmitted as follows:
- A149 2.1.1 the heading;
- A150 2.1.2 the address part (including the service indications if any);
- A151 2.1.3 the text part (including the signature, if any);

3 Transmission of the heading

A152 3.1 The provisions regarding the formation of the heading of a telegram are given in A27 to A38. Following the transmission of the numbering line and the pilot line (if required) the various parts of the preamble line shall be transmitted in the following order:

A153 3.1.1 the name of the office of origin;

A154 3.1.2 the number of words;

A155 3.1.3 the date and time of handing in of the telegram;

A156 3.1.4 any service instructions.

4 Transmission of the other parts of a telegram

A157 4.1 Every telegram must be transmitted as received from the sender and/or accepted by the office of origin, subject to the conditions mentioned in A101 and A102.

A158 4.2 With the exception of service indications, which must always be transmitted in the form shown in A7, A10 or A11, and in cases settled by agreement between the various Administrations, the use of any abbreviations whatsoever and alterations of any kind shall be prohibited.

5 Reception

A159 5.1 With the exception of mobile radio stations, no office may refuse to receive telegrams offered by a sending office, whatever their destination. However, in the case of a manifest irregularity, the operator shall point it out to the sending office by service advice. The responsibility for the telegram then reverts to the telegraph office of origin.

A160 5.2 Each received telegram should be considered by the receiving office to be a telegram sent by the sending office on purpose. When the receiving office is not the office of destination, the telegram shall be retransmitted to:

- the destination office, when it is located in the same country as the office receiving it;
- the destination office, when the office of destination is not in the same country as the receiving office but it can be retransmitted unambiguously.

A161 5.3 When the telegram cannot be transmitted unambiguously, the telegraph office of origin must be informed by a service advice, indicating the reason. The responsibility for the telegram then reverts to the telegraph office of origin.

A162 5.4 A telegram must not be refused or delayed because of irregularities. The telegram must be accepted and then, if necessary, a service advice sent to the office of origin requesting rectification.

A163 5.5 As soon as possible after reception, in each telegram the number of words received shall be compared with the number of actual words shown in the preamble line.

A164 5.6 Where, in accordance with A103, the sender has included repeated groups in the text part, the receiving office is not required to check such groups.

6 Errors and interruptions

A165 6.1 When operators are in doubt as to the accuracy of the transmission or reception, they shall give or request the partial or complete repetition of telegrams that they have either sent or received by a service advice.

- A166 6.2 Telegrams containing obvious errors can be retained only in cases where the rectifications can be obtained quickly. They must be retransmitted without delay with the service instruction **CTF** at the end of the preamble line. This instruction is supplemented by information about the nature of the rectification; for example, **CTF FOURTH**, meaning that the fourth word of the text will be corrected. Immediately after the retransmission of the telegram, the rectification shall be requested by service advice.
- A167 6.3 If, through interruption or any other cause, it is not practicable to give or receive the repetition [or acknowledgement of receipt (see B48)], this circumstance shall not prevent the office that has received the telegrams from sending them on, the service instruction **CTF** being inserted at the end of the preamble line, any necessary correction following later.
- A168 6.4 In cases of interruption, the receiving office shall immediately request the completion of an unfinished telegram and, when necessary, give an acknowledgement of receipt (see B48), either by another direct circuit if there is one in service or, if not, by a service advice, forwarded by whatever means is available.
- A169 6.5 When the transmission of a telegram has not been completed or the acknowledgement of receipt is not received within a reasonable time, the telegram shall be transmitted afresh with the service instruction **AMPLIATION** (see A38). The meaning of this service instruction, **AMPLIATION**, may be indicated on the addressee's copy by the destination office.
- A170 6.6 Where this second transmission is made by a route other than that used originally for forwarding the telegram, only the second transmission must be included in the international accounts. The sending office shall then make the necessary arrangements with the offices concerned, by service advice, with the object of excluding the original transmission of the telegram from the international accounts.

VII. Interruption of telegram communications

1 Diversion of telegrams

- A171 1.1 When the ordinary telegram communications are found to be interrupted, the office beyond which the interruption occurs or an office situated further back having at its disposal alternative routes shall forward the telegrams immediately by one of these routes or, failing that, by post (whenever practicable by registered letter) or by special messenger.

VIII. Delivery at destination

1 General provisions

- A172 1.1 The addressee of a telegram must prove his identity when requested to do so by the office of destination.
- A173 1.2 On the telegram delivered to the addressee the following information from the preamble line of the telegram handed in at the office of origin shall always be given:
- A174 1.2.1 the name of the office of origin;
- A175 1.2.2 the number of words;
- A176 1.2.3 the date and the time of handing in;
- A177 1.2.4 those service instructions that reach the office of destination.

2 Methods of delivery

- A178 2.1 Administrations shall notify the General Secretariat of the methods they normally use for delivery and quality of service (maximum delay for 95% of telegrams) for publication in the *Information for the Operation of the International Telegraph, Data Transmission and Telematic Services* [9].
- A179 2.2 Telegrams shall be delivered by any means available according to their addresses, either to a private house, office, business house, etc., of the addressee, or to a place where he is living or staying temporarily (hotel, etc.) or to a *telegraphe restant*, a *poste restante* or to a post office box.
- A180 2.3 Telegrams shall be delivered to the addressee by telephone, telex, teletex or facsimile as far as practicable where this method of delivery has been requested, unless the regulations of the destination Administration are contrary to such a procedure or unless the addressee has specifically requested that his telegrams should not be delivered by telephone, telex, teletex or facsimile.
- A181 2.4 Telegrams may also be delivered by telephone, telex, teletex or facsimile in accordance with conditions laid down by the Administrations.
- A182 2.5 Telegrams addressed to localities not served by international telecommunication circuits may be delivered to their address from a telegraph office of the country in which the place of destination is situated, either by post or, if these services exist, by express or by airmail. Nevertheless, delivery may be effected by such means from a telegraph office of another country when the destination country is not connected to the international telecommunication system.
- A183 2.6 Telegrams shall be delivered or forwarded to their destination in the order of their receipt and priority, except in the cases specified for the delivery of letter telegrams. **SVH** telegrams as well as government telegrams with priority or telegrams relative to the application of the United Nations Charter shall be delivered without delay.
- A184 2.7 Telegrams addressed to places in the locality served by the telegraph office shall be delivered without delay to their addresses subject to the limitation imposed by the working hours of delivery offices. Telegrams received during the night may be delivered immediately if they bear the service indication **URGENT**.
- A185 2.8 Telegrams may be delivered either to the addressee, to an adult member of his family, to any person in his service, to his lodgers or guests, or to the receptionist at the hotel or the house, unless the addressee has designated in writing a special representative.
- A186 2.9 If at the address indicated the messenger finds no one willing to accept the telegram on behalf of the addressee, a notice shall be left at the address, and the telegram shall be taken back to the office, to be delivered to the addressee or his representative upon application. However when there is no doubt regarding the address of the addressee, telegrams may be placed in his letter box if there is also no doubt that the addressee will empty his box within a reasonable period. When the addressee, after being notified of the arrival of a telegram, does not take delivery within a period not exceeding 48 hours (excluding weekends and official holidays), action shall be taken to notify the office of origin of the delay in delivery in accordance with A191 to A193.
- A187 2.10 Telegrams that have to be placed as *poste restante*, in a post office box or forwarded by post shall be handed without delay to the postal service by the telegraph office of destination.

- A188 2.11 Telegrams addressed *poste restante*, post office box or delivered by post shall, with respect to delivery and period of retention, be subject to the same rules as postal correspondence. As regards non-delivery they shall be subject to the provisions relative to the non-delivery of telegrams.
- A189 2.12 When a telegram is addressed *telegraphe restant* it shall be claimed at the telegraph counter by the addressee or his duly authorized representative who shall, if so requested, prove his identity.
- A190 2.13 Telegrams to be delivered to passengers in a ship may be delivered to the representatives of the ship. If the ship is entering port, the telegram shall be delivered preferably to the addressee himself, before disembarkation where practicable, and where it does not entail additional expense (for boat hire, for example).

3 Non-delivery and delayed delivery

- A191 3.1 When a telegram cannot be delivered, the office of destination shall send, with the minimum delay, a service advice to the office of origin stating the cause of the non-delivery. (For a layout of this telegram see D43.)
- A192 3.2 The address repeated in the service advice shall also include the name of the office of destination if this information is considered necessary. According to the circumstances, this advice shall be completed with the reason for non-delivery.
- A193 3.3 When a telegram with *telegraphe restant*, *poste restante* or post office box delivery, or a telegram to be delivered to an hotel, club, shipping or tourist agency, etc. has not been claimed by the addressee and is returned to the telegraph service, the office of destination shall without delay notify non-delivery to the office of origin.
- A194 3.4 The office of origin shall check the address and, if it has been altered, rectify it at once by a reply advice. The service advice shall contain any instructions necessary to correct any errors (for layout of this telegram, see D44).
- A195 3.5 If practicable, when a transit office receives a service advice of non-delivery, it shall check the address from the transit form of the original telegram and, if it observes an error, shall itself transmit to the office of destination the correction. If it does not observe an error, it shall transmit the service advice to the office of origin (see D32).
- A196 3.6 If the address has not been altered, the office of origin, whenever practicable, shall communicate the service advice of non-delivery to the sender. Failure to communicate this advice or delay in doing so shall not give a right to the refund of the charge paid for the telegram.
- A197 3.7 The addressee of a service advice of non-delivery may complete, rectify or confirm the address of the original telegram only by means of a service advice.
- A198 3.8 If, after the service advice of non-delivery has been sent, the telegram is claimed by the addressee, or if the office of destination is able to deliver the telegram without having received a correcting advice, it shall transmit to the office of origin a second service advice advising details of the delivery (for layout of this telegram, see D45).
- A199 3.9 The service advice of delivery shall be communicated to the sender, if he was notified of the non-delivery.
- A200 3.10 When it has not been possible to deliver a telegram to the addressee within a minimum period of 14 days from the date of its receipt at the office of destination, such a telegram may be disposed of, subject to the national regulations of the destination country.

IX. Obligatory telegrams

1 Telegrams relating to the safety of life (SVH)

- A201 1.1 In accordance with Article 25 of the Convention [2], telegrams relating to the safety of life on land, at sea, in the air or in outer space, and exceptionally urgent epidemiological telegrams of the World Health Organization shall have absolute priority over all other telegrams.
- A202 1.2 **SVH** telegrams, whether sent by an authority or private person, must refer to the safety of life in cases of exceptional urgency which are obviously of general interest.
- A203 1.3 Exceptionally, an **SVH** telegram may be accepted without the name of an addressee.
- A204 1.4 **SVH** telegrams sent by the Headquarters of the World Health Organization or by the regional epidemiological centres of that Organization shall be certified as really being telegrams of exceptional urgency relating to the safety of life.
- A205 1.5 The service indication **SVH** shall be shown before the address. No service indications other than **SVH** shall be admitted in safety of life telegrams. This service indication shall be included in the telegram:
- A206 1.5.1 by the office of origin in the case of an **SVH** telegram handed in at a telegraph office;
- A207 1.5.2 by the receiving land station in the case of an **SVH** telegram following a distress signal from a ship or an aircraft.

2 Government telegrams and telegrams relative to the application of the United Nations Charter

- A208 2.1 Government telegrams are, according to the definition of the Convention [2], telegrams originating with any of the authorities specified below:
- the Head of a State;
 - the Head of a government and members of a government;
 - Commanders-in-Chief of military forces, land, sea or air;
 - diplomatic or consular agents;
 - the Secretary-General of the United Nations; Heads of the principal organs of the United Nations²⁾;
 - the International Court of Justice.
- A209 2.1.1 Replies to government telegrams shall also be regarded as government telegrams.
- A210 2.2 Government telegrams must bear the seal or stamp of the authority that sends them. This shall not be required when the authenticity of the telegram is not in doubt.
- A211 2.3 The right to send a reply as a government telegram shall be established by the production of the original government telegram.

²⁾ However, the Heads of the specialized agencies of the United Nations are not included among the authorities entitled to send government telegrams (see Resolution No. 40 of the Plenipotentiary Conference of the International Telecommunication Union, Nairobi, 1982 [2]).

- A212 2.4 The telegrams of consular agents carrying on private business shall only be regarded as government telegrams when they are addressed to an official person. Telegrams that do not fulfil this condition shall, however, be accepted by telegraph offices and transmitted as government telegrams, but these offices shall at once report the matter to their Administration.
- A213 2.5 In government telegrams for which the sender does not request priority, the service indication **ETAT** shall be shown before the address.
- A214 2.6 In government telegrams for which the sender desires priority the service indication **ETATPRIORITE** shall be shown before the address.
- A215 2.7 Exceptionally, and subject to the application of the provisions of Articles 25 and 36 of the Convention [2], Administrations shall take the necessary steps to secure a special priority for telegrams relative to the application of the provisions of Chapters VI, VII and VIII of the United Nations Charter, exchanged in an emergency, between the following persons:
- the President of the Security Council;
 - the President of the General Assembly;
 - the Secretary-General of the United Nations;
 - the Chairman of the Military Staff Committee;
 - the Chairman of a regional sub-committee of the Military Staff Committee;
 - a representative to the Security Council or to the General Assembly;
 - a Member of the Military Staff Committee;
 - the Chairman or the Principal Secretary of a committee set up by the Security Council or the General Assembly;
 - a person performing a mission on behalf of the United Nations;
 - a head of State;
 - a minister member of a Government;
 - the Administrative Head of a trust territory designated as a strategic area.
- A216 2.7.1 Such telegrams, which do not fall under the class of government telegrams, shall be regarded as government telegrams and shall be accepted only if they bear the personal authorization of one of the officials mentioned above.
- A217 2.7.2 The service indication **ETATPRIORITE** shall be shown before the address.
- A218 2.8 Where special arrangements or regional arrangements concluded under Articles 31 and 32 of the Convention [2] exist, regarding accounting for **ETATPRIORITE** and **ETAT** telegrams the identity of the government or of the organization should appear in the preamble line using, wherever possible, the two letters of the destination indicator designating the government of the country concerned (or the two letters identifying the organization) followed by a space and the abbreviation **GOVT**.
- A219 2.9 When a request has been made for the routing of a government telegram by a prescribed route, and such request has been accepted, the telegram may not be transmitted by a route other than the requested route unless the sender, duly consulted, has authorized such procedure.
- A220 2.10 The authorities entitled under the Convention [2] to send government telegrams may send letter telegrams with the service indication **LTF**.
- A221 2.11 If difficulties arise in the routing of an **ETATPRIORITE** telegram which may delay its delivery to the addressee or if delivery is jeopardized because of exceptional circumstances, the sending office if possible or the office of destination shall inform the office of origin without delay.

3 Telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949

A222 3.1 In the following telegrams the service indication **RCT** shall be shown before the address:

A223 3.1.1 telegrams addressed to prisoners of war, civilian internees or their representatives (prisoners' representatives, internee committees) by recognized relief societies assisting war victims;³⁾

A224 3.1.2 telegrams that prisoners of war and civilian internees are permitted to send or those sent by their representatives (prisoners' representatives, internee committees) in the course of their duties under the Convention;³⁾

A225 3.1.3 telegrams sent in the course of their duties under the Conventions by the national information bureaux or the Central Information Agency for which provision is made in the Geneva Conventions, or by delegations of such bureaux or Agency, concerning prisoners of war, civilians who are interned or whose liberty is restricted, or the death of military personnel or civilians in the course of hostilities⁴⁾.

A226 3.2 In telegrams bearing the service indication **RCT** the only special service that shall be admitted is urgent transmission and delivery (**URGENT**), (if this service is admitted by the origin and destination countries).

A227 3.3 Telegrams sent by prisoners of war, civilian internees or their representatives shall bear the official stamp of the camp or the signature of the camp commandant or one of his deputies.

A228 3.4 Telegrams sent by the national information bureaux and the Central Information Agency for which provision is made in the Geneva Conventions, or by delegations thereof, as well as telegrams sent by recognized relief societies assisting war victims, shall bear the official stamp of the bureau, agency, delegation or society that sends them.

4 Ordinary private telegrams

A229 4.1 Ordinary private telegrams are obligatory telegrams other than those bearing the service indications **SVH**, **ETAT**, **ETATPRIORITE**, **A**, **OBS** or **RCT**. Ordinary private telegrams may be attributed special services in which case the relevant service indications in A11 should be shown before the address.

³⁾ Article 71, paragraph 2; Article 74, paragraph 5 and Article 81, paragraph 4 of the Geneva Convention of 12 August 1949, relative to the Treatment of Prisoners of War; Article 104, paragraph 3; Article 107, paragraph 2 and Article 110, paragraph 5 of the Geneva Convention of 12 August 1949, relative to the Protection of Civilian Persons in Time of War.

⁴⁾ Articles 122, 123 and 124 of the Geneva Convention of 12 August 1949, relative to the Treatment of Prisoners of War, Articles 136, 140 and 141 of the Geneva Convention of 12 August 1949, relative to the Protection of Civilian Persons in Time of War.

5 Telegraph service correspondence

- A230 5.1 Telegraph service correspondence consists of service telegrams and service advices (see Division D).

6 Meteorological Telegrams

- A231 6.1 The term *meteorological telegram* denotes a telegram sent by an official meteorological service or by a station in official relation with such a service, and addressed to such a service or to such a station, and which consists solely of meteorological observations or forecasts. A telegram of this kind must always be regarded as drawn up in plain language.
- A232 6.2 The service indication **OBS** shall be shown before the address. No service indication other than **OBS** shall be admitted in meteorological telegrams.
- A233 6.3 On request by the accepting officer, the sender must affirm that the text of his telegram fulfils the conditions prescribed for meteorological telegrams.

X. Optional telegrams

1 Postal financial telegrams

- A234 1.1 The issue, wording of the text and payment of money orders and postal cheques are regulated by the Universal Postal Union, even when they are transmitted by telegraph.
- A235 1.2 Money orders and postal cheques transmitted by telegraph are called "**POSTFIN** telegrams". The handling of **POSTFIN** telegrams between Administrations admitting them shall be subject to the same rules as other telegrams.
- A236 1.3 **POSTFIN** telegrams shall bear the service indication **POSTFIN** as the first line of the address part. Only the service indication **URGENT** may precede the service indication **POSTFIN**.
- A237 1.4 Any postal service indications (**AVIS PAIEMENT**, **AVIS INSCRIPTION** and **PAIEMENT MAIN PROPRE**) shall be shown on the second line of the address part.
- A238 1.5 The office of destination shall be shown as the last line of the address part.
- A239 1.6 If the locality in which the post office of payment is situated has no telegraph office, the **POSTFIN** telegram must bear the name of the post office of payment and that of the telegraph office which serves it.
- A240 1.7 Examples of the format of **POSTFIN** telegrams are given in C47 and C48.

2 Letter telegrams

- A241 2.1 Letter telegrams are telegrams for which special provisions concerning accounting rates, priority of transmission, and delivery are applied.
- A242 2.2 Administrations that do not accept and deliver letter telegrams must admit them in transit.
- A243 2.3 Letter telegrams bearing the service indication **LTF** shall be subject, as regards transmission and delivery, to the same conditions as **LT** telegrams. As regards acceptance, they shall be subject to the same conditions as government telegrams.
- A244 2.4 However, the provisions of Article 19 of the Convention [2] (see A259 to A265), relating to stoppage of telegrams, shall not apply to government letter telegrams (**LTF**).
- A245 2.5 As regards acceptance, transmission and delivery, letter telegrams shall be subject to the limitations set out in A246 to A248.
- A246 2.6 Radiotelegrams shall not be admitted as letter telegrams.
- A247 2.7 The only special service admitted in letter telegrams shall be de luxe form (**LX** or **LXDEUIL**).
- A248 2.8 Letter telegrams are as a matter of course delivered by post.

3 Privilege telegrams

- A249 3.1 Privilege telegrams (**CONFERENCE**) may be exchanged during the conferences and meetings of the ITU, in accordance with Recommendation D.193, which specifies limits on the number and length of such telegrams in certain cases.
- A250 3.2 Special services apart from **TFx**, **TLXx**, **TTXx** and **FAXx** shall not be admitted in privilege telegrams. Exceptionally, however, Heads of delegations or their deputies and members of the Administrative Council may exchange such telegrams with urgent transmission and delivery.

XI. Special services

1 General provisions

- A251 1.1 The provisions that form the subject of the other Chapters shall apply in their entirety to telegrams with special services, subject to the modifications prescribed in A253 to A258.
- A252 1.2 In the application of A253 to A258, the special services offered to the public may be combined subject to the class of the telegram and the acceptance of the special services in question by the Administrations of the office of origin and the office of destination.

2 Urgent transmission and delivery

- A253 2.1 The sender of an ordinary private telegram may obtain priority in transmission and delivery by requesting the special service urgent transmission and delivery (**URGENT**). The service indication **URGENT** shall be shown before the address.
- A254 2.2 Telegrams with urgent transmission and delivery shall be transmitted with the priority indicated in A124 to A135. Their precedences among themselves shall be settled by the time of their handing in at the office of origin and receipt at transit offices except where technically impracticable.
- A255 2.3 Administrations that accept telegrams with urgent transmission and delivery only in transit must admit them among telegrams of the same origin and destination either on the circuits where there is direct transmission across their territory or in their retransmitting offices.

3 De luxe form

- A256 3.1 The sender of a telegram may request the de luxe service for his telegram, which will then be delivered on a special de luxe form and/or in a special envelope.
- A257 3.2 When the sender wishes the de luxe service to be used, the service indication **LX** should be shown before the address of telegrams sent on joyful occasions; for telegrams sent on an occasion of mourning, the service indication **LXDEUIL** should be used.
- A258 3.3 The service shall be organized by special arrangements between the Administrations concerned, regarding in particular, the different occasions on which these telegrams may be used.

XII. Stoppage of telegrams

1 Transmission of certain telegrams as of right — Notification of stoppage

- A259 1.1 The right to stop transmission of certain private telegrams as provided for in Article 19⁵⁾ [2] of the Convention shall be exercised by the terminal or transit telegraph offices subject to reference to the appropriate authority, which shall decide without appeal.
- A260 1.2 **SVH** telegrams, government telegrams and service telegrams shall be entitled to transmission as of right. Telegraph offices shall exercise no control over these telegrams.
- A261 1.3 Administrations shall undertake to stop, at their respective offices, the acceptance, transmission and delivery of telegrams addressed to telegraphic reforwarding agencies and other organizations set up to forward telegrams on behalf of third parties so as to evade full payment of the charges due for the complete route. The office stopping the telegram shall at once inform the office of origin.
- A262 1.4 Telegrams that have been reforwarded by such an agency may likewise be stopped by the office of ultimate destination.
- A263 1.5 The office of origin must refuse telegrams addressed to a reforwarding agency when it has been notified of the existence of that agency.
- A264 1.6 Administrations shall undertake to stop, at their respective offices, telegrams that these offices receive from abroad by any means whatever (post, telegraph, telephone or otherwise) to be reforwarded by telegraph with the object of enabling these telegrams to evade the full payment of the charges due for the complete route.
- A265 1.7 The origin Administration of the telegrams must be notified of the stoppage.

⁵⁾ **Article 19 of the Convention — Stoppage of Telecommunications**

1 Members (of the Union) reserve the right to stop the transmission of any private telegram which may appear dangerous to the security of the State or contrary to their laws, to public order or to decency, provided that they immediately notify the office of origin of the stoppage of any such telegram or any part thereof, except when such notification may appear dangerous to the security of the State.

2 Members (of the Union) also reserve the right to cut off any other private telecommunications which may appear dangerous to the security of the State or contrary to their laws, to public order or to decency.

XIII. Archives

1 Archives

- A266 1.1 The original or facsimile copies of telegrams and the relevant documents relating to handing in, transmission (if practicable) and delivery, which should be retained by the Administrations, shall be preserved with all precautions necessary to ensure secrecy, until the accounts relative thereto are settled and, in any case, for at least six months counted from the month after that in which the telegram was handed in. Administrations may preserve the information by any other means, e.g. magnetic or electronic records.
- A267 1.2 However, should an Administration deem it desirable to destroy such documents before the above-mentioned period, and hence is not in a position to carry out an enquiry in respect of the services for which it is responsible, such Administration shall bear all the consequences both as regards refund of charges and any difference in international accounts that might otherwise have been observed.

2 Inspection of original forms of telegrams – Supplying copies of telegrams

- A268 2.1 Subject to the exceptions contemplated in Article 22 (No. 137) of the Convention [2], originals or copies of telegrams may be shown only to the sender or the addressee, after verification of his identity, or to the authorized representative of one of them.
- A269 2.2 During the minimum period fixed for preservation of the records, the sender and the addressee of a telegram or their authorized representatives shall have the right to obtain certified copies or photocopies:
- A270 2.2.1 of this telegram;
- A271 2.2.2 of the delivery copy, if this copy or a duplicate of it has been preserved by the destination Administration.
- A272 2.3 Administrations may fix a charge for copies and photocopies of originals or of copies delivered in accordance with A268 to A271.
- A273 2.4 Administrations shall not be bound to show or to furnish copies or photocopies of the documents mentioned above unless the senders, the addressees or their authorized representatives furnish the particulars necessary for tracing the telegrams to which their requests relate.

DIVISION B

OPERATIONAL PROVISIONS APPLYING TO MORSE AND SOUNDER WORKING

I. Morse code

1 Morse code signals

B1 1.1 The following are the written characters that may be used and the corresponding Morse code signals:

B2 1.1.1 Letters

	a . -	i . .	r . - .
	b - . . .	j . - - -	s . . .
	c - . . .	k - . -	t -
	d - . . .	l . - . .	u . . -
	e .	m - -	v . . . -
accented	e . . - . .	n - .	w . - -
	f . . - .	o - - - -	x - . . . -
	g - - .	p . - - .	y - . - - -
	h	q - - . -	z - - . . .

B3 1.1.2 Figures

1 . - - - -	6 -
2 . . - - -	7 - - . . .
3 . . . - -	8 - - - . .
4 -	9 - - - - .
5	0 - - - - -

B4 1.1.3 Punctuation marks and miscellaneous signs

Full stop (period)	[.] . - . . . -
Comma	[,] - - . . . -
Colon or division sign	[:] - - - . . .
Question mark (note of interrogation or request for repetition of a transmission not understood)	[?] . . - . . .
Apostrophe	['] - - - . . .
Hyphen or dash or subtraction sign	[-] - -
Fraction bar or division sign	[/] -
Left-hand bracket (parenthesis)	[(] -
Right-hand bracket (parenthesis)	[)] - -
Inverted commas (quotation marks) (before and after the words)	[“ ”] . -
Double hyphen	[=] - -
Understood . . . . .	. . . . .
Error (eight dots) . . . . .	. . . . .
Cross or addition sign	[+] . -
Invitation to transmit	- . . -
Wait -
End of work . . . . .	. . . . .
Starting signal (to precede every transmission)	- -
Multiplication sign	[x] -

2 Spacing and length of the signals

- B5 2.1 A dash is equal to three dots.
- B6 2.2 The space between the signals forming the same letter is equal to one dot.
- B7 2.3 The space between two letters is equal to three dots.
- B8 2.4 The space between two words is equal to seven dots.
- B9 2.5 On the Wheatstone instrument, where perforators are used, the space between two letters shall be equal to one *centre hole* perforation and the space between two words shall be equal to three *centre holes*.

3 Transmission of signs for which there is no corresponding signal in the Morse code

- B10 3.1 Signs that have no corresponding signal in the Morse code, but that are acceptable in the writing of telegrams, shall be sent as follows:

3.2 *Multiplication sign*

- B11 3.2.1 For the multiplication sign, the signal corresponding to the letter X shall be transmitted.

3.3 *Percentage or per thousand sign*

- B12 3.3.1 To indicate the signal % or ‰, the figure 0, the fraction bar and the figures 0 or 00 shall be transmitted successively (i.e. 0/0, 0/00).
- B13 3.3.2 A whole number, a fractional number, or a fraction, followed by a % or ‰ sign, shall be transmitted by joining up the whole number, the fraction number, or the fraction to the % or ‰ by a single hyphen.

Examples: For 2%, transmit **2-0/0** and not **20/0**

For 4 ½ ‰, transmit **4-1/2-0/00** and not **41/20/00**

3.4 *Inverted commas (quotation marks)*

- B14 3.4.1 The special signal for inverted commas shall be transmitted before and after the word or words. However, where code converters are used, the apostrophe may be transmitted twice before and twice after the word or words to signal inverted commas (quotation marks).

3.5 *Minute and second signs*

- B15 3.5.1 To transmit the minute (') or second (") signs, when such signs follow figures — for example 1' 15" — the apostrophe signal (· — — — ·) must be used once or twice as appropriate. The signal (· — · — ·) reserved for inverted commas may not be used for the second sign.

4 Transmission of groups of figures and letters, of ordinal numbers or of fractions

- B16 4.1 A group consisting of figures and letters shall be transmitted without spaces between figures and letters.
- B17 4.2 Ordinal numbers composed of figures and letters, 30me, 25th, etc., shall be transmitted in the form **30ME, 25TH**, etc.
- B18 4.3 A number that includes a fraction shall be transmitted with the fraction linked to the whole number by a single hyphen.
- Example: For $1\frac{3}{4}$, transmit **1-3/4** and not **13/4**
For $\frac{3}{4} 8$, transmit **3/4-8** and not **3/48**
For $363\frac{1}{2} 4 5642$, transmit **363-1/2 4 5642** and not **3631/2 4 5642**.

II. General transmission rules

- B19 1 All correspondence between two offices shall begin with the call signal.
- B20 1.1 For calling, the calling office shall transmit the call sign (not more than twice) of the office required, the word **DE** followed by its own call sign, the appropriate service abbreviation to indicate a priority telegram, an indication of the reason for the call and the signal — · — unless there are special rules peculiar to the type of apparatus used. The call shall always be made at hand speed.
- B21 2 The office called must reply immediately by transmitting the call sign of the calling station, the word **DE** followed by its own call sign and the signal — · —
- B22 2.1 If the office called is unable to receive, it shall give the *wait* signal. If it expects the wait to exceed ten minutes, the reason and probable duration shall be given.
- B23 2.2 When an office called does not reply, the call may be repeated at suitable intervals.
- B24 2.3 When the office called does not reply to the repeated call, the condition of the circuit must be examined.
- B25 3 The double hyphen (— · · · —) shall be transmitted either to separate:
- B26 3.1 the preamble from the service indications;
- B27 3.2 the service indications from each other;
- B28 3.3 the service indications from the address;
- B29 3.4 the office of destination from the text;
- B30 3.5 the text from the signature.

- B31 4 A transmission, once begun, may not be interrupted to give place to a communication of higher priority except in a case of absolute urgency.
- B32 5 Every telegram shall be terminated with a cross signal (· — · — ·).
- B33 6 The end of the transmission shall be indicated by the cross signal (· — · — ·) followed by the *invitation to transmit* signal **K** (— · —).
- B34 7 The end of work shall be indicated by the office that transmitted the last telegram. The correct indication is the *end of work* signal (· · · — · —).

III. Transmission of telegrams with identical text

1 Identical texts

- B35 1.1 When an office has to transmit to the same office more than five telegrams having identical texts and comprising more than 50 actual words, it may transmit the text once only. In that case, the text shall be transmitted in the first telegram only, and the text of all the telegrams with identical text that follow shall be replaced by the words **TEXT NR ...** (number of first telegram).
- B36 1.2 This procedure necessitates the transmission in succession of all telegrams with identical text.
- B37 1.3 The receiving office must be informed of the transmission of telegrams with identical text by a service note on the following lines:

... **TELEGRAMS WITH IDENTICAL TEXT FOLLOW**
- B38 1.4 When reception is possible by means of perforated tape, the receiving office should be informed in ample time to allow it to receive telegrams with identical text by tape.

IV. Transmission irregularities — Service notes

- B39 1 To indicate *wait*, the corresponding signal (· — · · ·) shall be transmitted.
- B40 2 If the sending operator becomes aware of an error, he shall stop, give the error signal (· · · · ·), repeat the last word correctly transmitted, and continue the transmission.
- B41 3 If it is necessary to interrupt the transmission for any reason, the procedure shall be as follows until transmission stops.
- B42 3.1 Morse simplex, transmit a series of dots.
- B43 3.2 Morse duplex, transmit the letters **BK**.
- B44 3.3 Once transmission has been stopped, the receiving operator shall repeat the last word correctly received followed by a question mark. The sending operator shall resume transmission from that word.
- B45 3.4 If a repetition is asked for after a long interruption, the telegram and the part of the telegram in question must be precisely indicated.
- B46 4 Service notes **XQ** can be interposed between telegrams of a series.

**V. Checking the number of words transmitted –
Acknowledgement of receipt**

1 Checking the number of words transmitted

- B47 1.1 Where the receiving operator finds a discrepancy between the number of actual words shown in the preamble line and the number received, he shall notify the sending operator by indicating the number of words received, followed by the first character of each word (example: **17 WDS J C R B 2 D ...** etc.). If the sending operator has simply made an error in transmitting the number of words, he shall reply **ADMITTED** and indicate the actual number of words (example: **17 ADMITTED**); if not, he shall rectify the passage found to be incorrect according to the initials received. In both cases, he shall interrupt, if necessary, the transmission of the initials as soon as he is able to rectify or confirm the number of words.

2 Acknowledgement of receipt

- B48 2.1 After the verification of the number of words and the rectification of any errors, the receiving office shall acknowledge to the sending office the receipt of the telegram or telegrams forming the series.

- B49 2.2 A single telegram shall be acknowledged by the letter **R** followed by the number of the telegram received, for example: **R 436**.

- B50 2.3 For an **SVH** telegram, a government telegram with priority, or a telegram relative to the application of the United Nations Charter, receipt shall be acknowledged in the form: **R 436 SVH** or **R 436 ETAT**.

- B51 2.4 For a series of telegrams, the letter **R** shall be given with the number of telegrams received, and also the first and last numbers of the series, for example, **R 6 157 162**.

- B52 2.5 If the series includes **SVH** telegrams or government telegrams with priority, the acknowledgement of receipt shall be supplemented by the numbers of these telegrams thus:

R 6 157 162 INCLUDING 159 SVH 161 ETAT

- B53 2.6 In every case, the acknowledgement of receipt must be transmitted immediately in the following form:

LR 683 MISSING 680 RETAINED 665 [This acknowledgement of receipt contains the last received (683), the number 680 missing and the number 665 retained.]

- B54 2.7 The sending operator must request the acknowledgement of receipt immediately after the transmission of an **SVH** telegram, a government telegram with priority or a telegram relative to the application of the United Nations Charter. In such cases, the acknowledgement of receipt shall take the following form:

LR SVH 683

VI. Transmission procedures

- B55 1 Transmission may be conducted as follows, according to the volume of traffic:

- B56 1.1 alternate transmission of telegrams;

- B57 1.2 alternate transmission in series.

- B58 2 In alternate transmission, the receiving office shall not have the right to interrupt the transmission to give place to a communication of higher priority, except in cases of absolute urgency, see B31.

- B59 3 The exchange of telegrams in alternate order between two offices in direct communication shall follow the rules concerning the order of transmission.
- B60 3.1 A telegram of higher priority in order of transmission shall not count in the alternate order.
- B61 3.2 The office that has just finished a transmission shall have the right to continue when it has telegrams awaiting transmission or when telegrams reach it that are entitled to priority over those that the office in communication has to transmit, unless the latter has already begun its transmission.
- B62 3.3 When an office has finished transmitting, the office that has just received shall transmit in its turn; if the latter has nothing to transmit, the former shall continue to send its traffic. If neither has anything to transmit, the offices shall exchange the *end of work* signal.
- B63 4 When traffic so justifies, and subject to agreement between the offices in communication, telegrams shall be exchanged in series alternately.
- B64 4.1 Telegrams of the same series shall be considered as forming a single transmission. However, each correctly received telegram shall be retained at the receiving position until the next but one telegram begins or for the time normally required to transmit a telegram of average length.
- B65 4.2 Each series shall comprise a maximum of five telegrams. Nevertheless, every telegram containing more than 100 words on the Morse instrument or more than 150 words on sound-reading instruments shall count as a series or terminate a series already in course of transmission.
- B66 4.3 The sending office shall end a series in course of transmission when it has only letter telegrams to send. It shall not resume transmission until the office with which it is working has no more telegrams of higher priority on hand.

DIVISION C

OPERATIONAL PROVISIONS APPLYING TO PRINTING TELEGRAPH SYSTEMS

I. Transmission signals

1 Transmission signals of International Telegraph Alphabet No. 2

- C1 1.1 Figure 1/F.1 shows the signals of the International Telegraph Alphabet No. 2.
- C2 1.2 In the interests of speed and efficiency in the movement of telegraph traffic, the use of the five-unit code is recommended in accordance with International Telegraph Alphabet No. 2 as defined in Recommendation S.1. However, this provision need not apply to Administrations which by mutual agreement have made other arrangements in respect of a particular circuit or network. In such cases, the Administrations concerned could provide suitable facilities for converting from their method of operation to the five-unit code of International Telegraph Alphabet No. 2 whenever it becomes desirable to interconnect with offices using the latter system.
- C3 1.3 The graphic characters that have a corresponding signal in International Telegraph Alphabet No. 2 are those shown in A16, A17 and A18.
- C4 1.4 The coding of the printed characters and control characters conforming to Recommendation S.1 is set out in Figure 1/F.1.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1.....	—	?	:	☒	3				8	⌚	(	)	.	,	9	0	1	4	'	5	7	=	2	/	6	+	<	≡	↓	↑	△	□
A.....	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	<	≡	↓	↑	△	□

CCITT-82/20

- Represents a perforation in the paper tape (Z condition or stop polarity)
- 1... Figure case
- A... Letter case
- ☒ or ⚡ *Who are you?* in the international telex and gentex services. The combinations Nos. 6, 7 and 8 in the figure case are available for national usage.
- ⌚ Audible signal (bell)
- < Carriage return
- ≡ Line feed
- ↓ Letter-shift
- ↑ Figure-shift
- △ or → Space
- Unperforated tape all start polarity (not normally used)

FIGURE 1/F.1

International Telegraph Alphabet No. 2
(as shown on perforated tape)

- C5 1.4.1 To indicate a blank, the signal space shall be transmitted.
- C6 1.4.2 To indicate a transmission error, proceed as per C94.
- C7 1.4.3 To indicate wait, the characters **MOM** shall be transmitted.

2 Transmission of signs for which there is no corresponding signal in the telegraph alphabet

- C8 2.1 Signs that have no corresponding signal in a telegraph alphabet but are acceptable in the writing of telegrams shall be sent in such a way as not to distort the meaning and taking into account the possibilities offered by the telegraph alphabet as follows.
- C9 2.1.1 *Percentage sign (%)*: Successively transmit the figure **0**, the fraction bar and the figure **0** (example: **0/0**).
- C10 2.1.2 *Per thousand sign (‰)*: The ‰ sign shall be indicated by transmitting the figure **0** followed by the fraction bar and the figures **00** (example: **0/00**).
- C11 2.1.3 *Combination of numbers and % or ‰*: A whole number, a fractional number, or a fraction, followed by a % or a ‰ sign, shall be transmitted by joining up the whole number, the fractional number or the fraction to the % or ‰ sign by a dash.
 Examples: For 2% transmit **2-0/0** and not **20/0**
 For 4½‰ transmit **4-1/2-0/00** and not **41/20/00**
- C12 2.1.4 *Inverted commas (quotation marks) (")*: Transmit the apostrophe (') twice at the beginning and end of the text within the inverted commas (" ").
- C13 2.1.5 *Minute (') and second (") signs*: The minute sign and the second sign shall be transmitted by means of the apostrophe sign, transmitted once for the minute sign, and twice for the second sign.

3 Transmission of ordinal numbers, groups of figures and letters or of numbers that include fractions

- C14 3.1 Ordinal numbers composed of figures and letters: 30^{me}, 25th, etc., shall be transmitted in the form of **30ME**, **25TH**, etc.
- C15 3.2 Letters or groups of letters followed by letters or figures placed above or below the line shall be transmitted in the form substituted for them by the sender.
- C16 3.3 Groups consisting of figures and letters must be transmitted as set forth in the telegram.
 Examples: 3B is transmitted as **3B**
 AG 25 is transmitted as **AG 25**
- C17 3.4 A number that includes a fraction shall be transmitted with the fraction linked to the whole number by a single hyphen.
 Examples: For 1¾, transmit **1-3/4**, and not **13/4**
 For ¾ 8, transmit **3/4-8**, and not **3/48**
 For 363½ 4 5642 transmit **363-1/2 4 5642**, and not **3631/2 4 5642**.

II. General provisions for transmission of telegrams

1 Calling

- C18 1.1 Correspondence between two offices shall begin with the call signal. However, on circuits operated by start-stop apparatus, unless a different arrangement has been made, the apparatus must be connected in such a way that the transmitting office may start transmission of telegrams without a special call or previous notice to the receiving office.

- C19 1.2 A transmission, once begun, may not be interrupted to give place to a communication of higher priority except in case of absolute urgency.
- C20 1.3 Before transmission of a telegram actually begins, the condition of the circuit and the availability of the receiving apparatus shall be checked. To this end, in the systems that allow it, the signals *figure-shift* and *D* (or Who are you?) shall be transmitted. When the correspondent's answer-back code has been correctly received, the answer-back code of the transmitting station shall be transmitted.
- 2 Transmission with running series of numbers**
- C21 2.1 Each Administration shall have the right to number in series telegrams to be transmitted over international circuits. In each case it shall notify its intention to the Administrations concerned.
- C22 2.2 The serial number shall be transmitted at the beginning in the numbering line. Administrations shall each decide as far as it is concerned, whether the office number shall be transmitted. If so, it will be included in the numbering line.
- C23 2.3 When serial numbers are used, all telegrams shall be numbered in unbroken series. A special series may be used for each section or circuit by agreement between the Administrations concerned. This series shall then differ from the series used for the other sections or circuits by distinguishing figures or a prefix composed of letters.
- C24 2.4 Offices in correspondence shall agree upon the start and finish of the series of numbers and upon the periodicity of the start of the cycle.
- C25 2.5 In all cases, telegrams that are to be diverted shall receive new serial numbers.
- C26 2.6 When the receiving office observes that a serial number is missing, it must inform the sending office at once in order that the necessary inquiries may be made.
- C27 2.7 When it is necessary to strike out a serial number that has already been used, the transmitting office shall inform the receiving office by service advice.

III. General provisions for reception

- C28 1 When reception is unintelligible, the operator shall act according to the special rules given for the different methods of operation (see C49 to C55 and C79 to C87).
- C29 2 If there is a discrepancy between the number of actual words shown in the preamble line and the number received or any other irregularities the operator shall act according to the special provisions given for the different methods of operation (see C52 to C55 and Recommendation F.31).
- C30 3 When any discrepancy or irregularity does not arise from a mistake in transmission, the rectification can only be made by agreement reached, if necessary, by service advice between the office of origin and the office in correspondence. Failing such agreement, the number of words indicated by the office of origin or any other irregularity shall be admitted, the telegram being forwarded, meanwhile, with the service instruction "Correction to follow ..." transmitted in the abbreviated form [example: CTF ... **WORD(S)**], the meaning of which shall be indicated by the office of destination on the copy delivered to the addressee. The correction shall be requested by service advice from the office of origin by the office that has inserted the service instruction CTF ...

IV. Special provisions for point-to-point operations

1 Transmission of telegrams to tape-printing systems

- C31 1.1 The double hyphen (=), which is always preceded by a space but must never be followed by a space, shall be transmitted either to separate:
- C32 1.1.1 the preamble line from the service indications;
- C33 1.1.2 the service indications from each other;
- C34 1.1.3 the service indications from the address;
- C35 1.1.4 the office of destination from the preceding parts of the address;
- C36 1.1.5 the office of destination from the text;
- C37 1.1.6 the text from the signature.
- C38 1.2 Each telegram shall be terminated by a cross (+). The cross must always be preceded and followed by a space.
- C39 1.3 If the sending operator becomes aware of an error, he shall proceed as in C94.
- C40 1.4 Example of format to be used in tape-printing systems:
- MOH143¹ KIEV 12 18 0830² =URGENT =KARL MUELLER
ROSSMARKT 13/1 =HAMBURG =WIR KOMMEN SCHON HEUTE
ABEND =KARIN +**

¹ Distinguishing letters and/or serial number (see C21 to C27).

² Preamble line, the parts referred to in A30 to A38.

2 Transmission of telegrams to page-printing systems

- C41 2.1 When page-printing teleprinters are used for reception, the transmitting office or offices should transmit traffic to the receiving office without error according to the layouts shown in the C46 to C48.
- C42 2.2 Every line must consist of not more than 69 printing characters (including spaces), except for the address in which lines should not exceed 43 (and preferably no more than 30) printing characters.
- C43 2.3 The transmitting operator should transmit each word as a whole and should avoid dividing words between the end of one line and the beginning of the next.
- C44 2.4 The sending office should eliminate errors before transmission.
- C45 2.5 When preparing telegrams in page format that may be circulated over the gentex network or via the telegram retransmission system, the additional provisions contained in C56 to C115 should be observed.

C46 2.6 Example: *Ordinary private telegram*.

<=
ZCZC LPA264 LGE906 PLG408<= ¹
FRXX CO GBLG 020<= ²
LONDON/LG 20 26 1405<= == ³

DUPONT<=
15 RUE DE LA REPUBLIQUE<=
NANTES<= ==

JOHN AND SUE LEAVE BY ROAD TODAY EXPECTED TO ARRIVE<=
EARLY TOMORROW<=
DAD<= == == == == == == ⁴

NNNN ⁵

- ¹ Distinguishing letters and/or serial number (C21 to C27).
- ² The pilot line may be omitted when transmitting to systems that do not demand it.
- ³ Preamble line, the parts referred to in A30 to A38.
- ⁴ Minimum of five spaces before the signature.
- ⁵ Ten letter-shifts follow NNNN, except in relations that do not require them.

C47 2.7 Example: *POSTFIN telegram with postal service indications* ³

<=
ZCZC AKW112 MDT8067<=
INBY CJ GBMT 024<= ¹
LONDON/MT 24 26 1130<= == ==

POSTFIN<=
AVIS PAIEMENT<=
BOMBAY<= == ==

MANDAT 2793 BRADFORD 10610 GB MOHD YOUNAS<=
500 (FIVE HUNDRED) RUPEES<=
MONSIEUR JEAN DE BIASE 74 APOLLO BUNDO<=
HAPPY BIRTHDAY<= == == == == == == ==

NNNN ²

- ¹ The pilot line may be omitted when transmitting to systems that do not demand it.
- ² Ten letter-shifts follow NNNN except in relations that do not require them.
- ³ Postfin telegrams are under study within the UPU.

C48 2.8 Example: *POSTFIN telegram containing a postal cheque order*

<=
ZCZC ABC123 BBAA8371<=
FRPA CJ CHBX 018<=¹
BERN/1/SCHANZENPOST 18/17 15 1105<== ==

POSTFIN<=
AVIS INSCRIPTION<=
PARIS<== ==

VIREMENT 34688 ANTON SCHMIDT 30-53998 BERNE<=
500 CINQCENTS FRANCS FRANCAIS<=
PIERRE DUBOIS 56-231089<== == == == == == ==

NNNN²

¹ The pilot line may be omitted when transmitting to systems that do not demand it.

² Ten letter-shifts follow NNNN except in relations that do not require them.

3 Reception

- C49 3.1 When reception is unintelligible the receiving operator shall interrupt the transmitting office or cause the transmission to be interrupted.
- C50 3.2 To interrupt transmission from an office, transmit a succession of letters **T** or figures **5** or, on duplex circuits, transmit a call followed by the abbreviation **BK** and an audible signal which may be repeatedly transmitted.
- C51 3.3 When interrupting the transmitting office, the reason for the interruption shall be given (paper mutilated, etc.) and the number of the last telegram correctly received (**LR . . .**) shall be indicated.
- C52 3.4 If there is a difference between the number of actual words shown in the preamble line and the number received, the operator shall send a service advice to the transmitting office, indicating the serial number of the telegram in question, the abbreviation **CK**, the number of words received, and the first character of each word. In telegrams with more than ten actual words it is admissible to indicate each fifth or tenth actual word instead of the character of each word. In this case the indicated words shall be preceded by the abbreviation **FVS** (fives) or **TNS** (tens) respectively. For the words behind the last indicated fives or tens, the first character of each word shall be given. If the sending operator has simply made an error in transmitting the number of words, he shall reply by a service advice indicating and confirming the actual number of words; if not, he shall rectify by an appropriate service advice the passage found to be incorrect according to the words and/or character of the words received.
- C53 3.5 In the case of reception by a tape-printing system, the reason for the interruption may also be followed by the last word, to which a question mark must be added, or the number of the last telegram correctly received (**LR . . .**).
- C54 3.5.1 The sending operator shall go back and continue the transmission from that word or telegram, after having been instructed to continue by **GA**, **RPT AA . . .**, etc.
- C55 3.6 In the case of reception by a page-printing system, the sending operator shall always go back and continue the transmission from the last telegram correctly received.

V. Special provisions for gentex operations

1 General provisions

- C56 1.1 The gentex network is made up of telegraph offices of the countries participating in the service (gentex offices), of switching centres and of telegraph channels connecting the offices to switching centres and the switching centres to one another. Either tape-printing or page-printing teleprinters are used for transmission and reception.
- C57 1.2 When page-printing teleprinters are provided for the transmission and/or reception of telegrams the particular provisions and the format of C88 to C90 must be observed.

2 Answer-back codes

- C58 2.1 The answer-back code used in the gentex service shall be in conformity with Recommendation F.21.

3 Responsibility of transmitting or receiving stations

- C59 3.1 The operator in the calling station is primarily responsible for the transmission of telegrams. If a telegram fails to arrive or if its text is mutilated, he will have to prove that he has followed the correct procedure.
- C60 3.2 He can provide this proof by producing the original of the telegram, the local record if there is one and by verifying that the called station's answer-back code was received without error.
- C61 3.3 The operator manning a position is responsible for seeing that there is enough paper in the machine, that the inking system is fully serviceable, and that the machine is switched to *engaged* while the ribbon and paper are being replaced. Furthermore, the operator of the receiving station shall eliminate any erroneous passages.

4 Procedures before transmission of a telegram

- C62 4.1 At the calling station, the telegram may be provided with a reference number, which will be transmitted before the preamble line and will serve as an additional means of identifying the telegram if required.
- C63 4.2 To set up the call with the required office, the operator of the calling station proceeds, according to the rules of his network, to obtain the required number, which is made up of:
- the prefix giving access to the called country from the calling station;
 - the number of the called office.
- C64 4.3 Having set up the call, the operator at the calling station brings into operation the answer-back device in the station obtained, together with that of his own station when these two operations are not automatically controlled by the equipment in the calling or called country. The operator at the calling station checks the answer-back code he obtains against that of the required office and, if they correspond, he then begins to transmit the telegram.
- C65 4.4 If the answer-back code received is not the code expected, the reason may be one of the following:
- C66 4.4.1 the answer-back code belongs to an overflow position which can receive the telegram; transmission of the telegram can therefore begin;

- C67 4.4.2 a wrong station has been obtained. The operator sends the signal **BK**, gives the clearing signal, and again tries to put the call through to the office required.
- C68 4.5 Should this fresh attempt end in reception of the answer-back code of a position which is not an overflow position and does not belong to the office required, the operator shall proceed in accordance with C76 and C77.
- C69 4.6 If the calling station receives the busy signal, the call shall be repeated after approximately two minutes. If the second call is unsuccessful, a third call shall be made after a further two minutes. If the busy signal is again received, telegrams shall be diverted to that telegraph office in the same country shown in the routing list as the office required in such cases.
- C70 4.7 When a call is sent to a gentex office in a country providing diversion to an overflow position, connection with the required gentex office or an overflow position may be delayed. The operator of the calling station is informed thereof by reception of **MOM**. He will then await subsequent routing of his call.

5 Transmission of telegrams

- C71 5.1 When communication has been established with the desired telegraph office or with an overflow position, the telegram shall be transmitted in the manner described in C31 to C40 or C88 to C90.
- C72 5.2 After transmission of the telegram, the operator obtains the answer-back code of the called station and then transmits his own. The operator of the calling station then gives the clearing signal.
- C73 5.3 For interconnection between a gentex office and a telegram retransmission centre see C102 to C115.
- C74 5.4 When a calling station has several telegrams for the same office, once the calling station has made contact with that office, the operator checks the answer-back code in accordance with C64, and then transmits the telegrams one after the other taking into account C71 and, if appropriate, C102 to C115. In this case, one exchange of the answer-back codes takes place between the end of one telegram and the beginning of the following one.

6 Reception of telegrams

- C75 6.1 The called station checks each telegram received in accordance with the provisions of A159 to A164. If correction is necessary a request must be sent by service advice to the transmitting office. When receiving from a telegram retransmission centre the request must be sent as prescribed in Recommendation F.31, § 6.2.

7 Abnormal conditions before transmission

- C76 7.1 Should the operator of a calling station notice, during the setting up of a call, anything that seems to him due to faulty lines or equipment he shall give the clearing signal.
- C77 7.2 After approximately two minutes, he shall try to call again. If, once again, there are abnormal conditions he shall give the clearing signal, record the abnormal conditions on the telegram or telegrams and dispose of it or them by an alternative route. He shall then report the fault.
- C78 7.3 Should a mutilated answer-back code be received, or should there be no answer-back code at all, the operator shall give the clearing signal and proceed as in C77.

8 Abnormal conditions during transmission

- C79 8.1 If the operator at the called station notes any errors in the text of a telegram that is being received, he shall send letters **T** or figures **5** repeatedly until transmission stops. He shall then send **MUT RPT AA** ... (or possibly, the reference number (**SRL NR**) or the handing-in number (**TG NR**) of the first mutilated telegram when a series of telegrams is being received) and the last correctly received word or group. The operator at the calling station shall recommence transmission at the requested place.
- C80 8.2 Should a completely mutilated text be received, including mutilation of the answer-back code of the calling station, an operator noticing this before the call is broken off shall stop the transmission by sending letters **T** or figures **5** repeatedly until transmission stops. He shall then send **MUT RPT ALL**.
- C81 8.3 If the operator at the called station cannot stop a transmission, or if the text received when the transmission is resumed continues to be mutilated, he shall send the clearing signal.
- C82 8.4 After transmission if the answer-back code of the called station is not received or is incorrectly received at the end of transmission of a telegram, the operator of the calling station then gives the clearing signal.
- C83 8.5 The calling station then proceeds once more to call the required office and recommences transmission of the telegram including the service instruction **AMPLIATION** at the end of the preamble line.
- C84 8.6 The procedure described under C83 above is also applied when the call is accidentally interrupted during transmission by the calling station.
- C85 8.7 If a call is accidentally interrupted during transmission, or if a call has been cleared after transmission of **BK**, the called office holds the texts received until the calling office resumes transmission. If transmission is not resumed within twenty minutes, the called office sends a service advice to the calling office, requesting any corrections or repetitions that may be necessary.
- C86 8.8 When a completely mutilated text is received, and the answer-back code of the calling station is also mutilated, if the call has already been cleared, the received text shall be kept for enquiry purposes. The name of the receiving station and the time of receipt shall be marked on the form. Since the receiving station cannot, in such circumstances, transmit a request to the transmitting station, the telegram will be lost if the transmitting station has failed to notice the fault.
- C87 8.9 Shortage of paper can in certain teleprinters cause the clearing signal to be sent automatically. A break in the tape or faulty tape feed shall, where possible, give rise to a local signal if the clearing signal is not sent automatically.

9 Traffic between gentex offices equipped with page-printing teleprinters

C88 9.1 Provisions C41 to C48 or C89 and C90 should be followed, the format being slightly modified to meet the requirements of the gentex service.

C89 9.1.1 Example:

☒ <= ¹
16250Z OSLO N<=
4071TC FFM D<=
ZCZC 18<= ²
NOOO CO DPFF 013<= ³
FRANKFURT AM MAIN/9 13/12 25 0935<= ==

INTERFER <=
OSLO <== ==

ARRIVING WEDNESDAY KLM FLIGHT 308 KINDLY<=
ARRANGE HOTEL RESERVATION<=
JUDY<== == == == == ⁴

NNNN ☒ <= ^{1,5}
16250Z OSLO N<=
4071TC FFM D

- ¹ Method of operating in accordance with C65. The symbol ☒ indicates the *Who are you?* signal.
² Transmission serial number.
³ The pilot line may be omitted when transmitting to systems that do not demand it.
⁴ Minimum of five spaces before the signature.
⁵ Ten letter-shifts follow NNNN except in relations that do not require them.

C90 9.2 Administrations may nevertheless mutually agree to ignore the provision that the transmission should be free of errors.

10 Interworking between tape-printing and page-printing teleprinters

C91 10.1 When tape-printing teleprinters are used to transmit page format they should generally be equipped in accordance with Recommendation S.5 and operated in accordance with C41 to C48. When page-printing teleprinters are used to transmit towards tape-printing teleprinters, C41 to C48 or C89 and C90 should be followed.

11 Special transmission procedures for use with format converters and/or automatic error correction devices

C92 11.1 Besides the transmission procedure laid down in C71, it is admissible:

C93 11.1.1 that gentex offices equipped with tape-printing teleprinters may use the double hyphen (=, combination No. 22, figure case) whenever the carriage-return and line-feed signals (combinations Nos. 27 and 28) are used in the format C41 to C48 (notwithstanding C31 to C37). No space is shown between the double hyphen(s) and the following word. These offices will also have to transmit five spaces before the signature;

- C94 11.1.2 that gentex offices, whether equipped with page- or tape-printing teleprinters may signal **XXXXX** (at least five times the letter **X** without spacing) joined to the erroneous word, followed immediately by the retransmission correctly of the erroneous word.
- C95 11.2 If a space has been transmitted after the erroneous word the automatic error correction device will not suppress the error; if in this case error-free reception is necessary, the telegram will have to be cancelled by transmitting the expression **ANUL** space **ANUL** and ten double hyphens. The telegram in question must then be transmitted again including all the exchanges of answer-back codes.
- C96 11.3 By mutual agreement between Administrations, the foregoing procedures may also be adopted when format converters or error-correcting devices are not employed in order to enable operators to observe a uniform transmission procedure.

12 Service advices (A) and use of codes

- C97 12.1 When a telegram is sent on, marked **CTF**, the sending office shall be informed of the fact by a service advice (**A**).
- C98 12.2 Service advices shall make use of the codes listed in C101 and also the five-letter codes appearing in *Codes and Abbreviations for the Use of International Telecommunication Services* [7] (Recommendation F.92).
- C99 12.3 The codes listed in C101 shall also be used when, in exceptional circumstances, operators have to communicate while a call is still connected.
- C100 12.4 The expression **UTCOD** (*use the gentex code*) should be used to inform the corresponding office that it is necessary to use the code expression of the gentex service.
- C101 12.5 *Service codes and abbreviations to be used in gentex operation*

ABBREVIATION	MEANING
ABS	Telegraph office closed
ADRS	Address
ANH	Congestion
ANUL ...	Delete ...
BK	I cut off
CALL NR	National call number of a gentex office
CCT	Circuit
CFM	Please confirm/I confirm
CI	Conversation impossible

CK	Please check number of words
CLA	Class of telegram
CRV	How do you receive?
CTF	Correction to follow
DBL	Double word(s)
DEB	Overflow position
DER	Out of order
DER MOM	Bad reception, do not cut off, we are testing the line
DETR ...	I am re-routing to .../Re-route to .../Alternative route?
DIF	Different
DTE	Date of handing-in
FIG	Figure(s)
FVS	Fives
GA	You may transmit
IND	Answer-back code
INQ	Position specializing in the handling of service notes and advices
LTR	Letter(s)
MNS	Minutes
MOM	Please wait!
MOM PPR	Please wait! I have paper trouble
MUT	Mutilated
NA BK	Correspondence with this telegraph office is not admitted. I cut off
NC	No circuit
NCH	Number changed
NOT R	Not received
NP	The called number is not/no longer in use
NR	Number
OCC	Busy
O/D	Telegraph office of destination
OK	Agreed
OMTD	Omitted
O/O	Telegraph office of handing-in
PBL	Preamble of telegram
PPR	Paper
QGA	May I transmit?
QOK	Do you agree?
R ...	Received ...
RAFSO	Second application
RAP	I shall call you again
RDI	Redirected call
REF ...	With reference to ...

ROUTE	Route to .../I am routing to .../Route?
RPFR	Please prepare your reperforator
RPFR TXT	Prepare your reperforator because of long or difficult text or because of telegrams having the same text
RPT	Repeat please/I repeat
RPT AA ...	Repeat all after ...
RPT AB ...	Repeat all before ...
RPT ALL	Repeat the whole telegram
RPT BN ...	Repeat all between ... and ...
RPT SRL NR ...	Repeat reference number given by the transmitting office ...
RPT TG NR	Repeat telegram number
RPT TXT	Repeat text
RPT WA ...	Repeat word after ...
RPT WB ...	Repeat word before ...
SIG	Signature
SRL NR	Reference number given by a gentex transmitting office
SVIN	Service indication
SVP	Please
T (in either shift) repeated	Stop your transmission
TCHN	Technical service/I shall advise the technical service
TEST MSG	Please send a test message
TG	Telegram
TG NR ...	Telegram number given by the handing-in office ...
TNS	Tens
TPLE	Triple word(s)
TPR	Teleprinter
TXT	Text
UTCOD	Use the gentex code
W	Word(s)
WEFXU	Waiting reply to our service advice
WTG	We are waiting/I am waiting
XXXXX	Error signal
+ ?	I have finished my transmission. Do you wish to transmit?

VI. Interworking between the telegram retransmission system and the gentex network

- C102 1.1 The special provisions for gentex operation (C56 to C101), except as specified below, will be applied to traffic between gentex telegraph offices and telegram retransmission centres in both directions.
- C103 1.2 Administrations will designate the gentex offices open to traffic with telegram retransmission centres and will publish this information in the *Routing Table for Offices Taking Part in the Gentex Service* [6] (Recommendation F.93) and in the *List of Indicators for the Telegram Retransmission System and Telex Network Identification Codes* [8] (Recommendation F.96).

- C104 1.3 The format and arrangements described in Recommendation F.31 shall apply except that channel sequence numbering is not applicable in either direction on the channels connecting the two systems.
- C105 1.4 In the direction gentex to telegram retransmission system the telegram identification group, which will immediately follow the start-of-message signal, shall be composed of two letters identifying the originating country or Administration (in accordance with Recommendation F.96), the call-number of the gentex office followed by one or two letters identifying the gentex position and the serial number of the telegram which that position is transmitting. The group shall not include a space nor exceed 15 printing characters.
- C106 1.5 In the direction telegram retransmission system to gentex all preceding channel sequence numbers and the telegram identification group will be transmitted.
- C107 1.6 The transmission of each telegram should be immediately preceded and followed by the exchange of the answer-back codes.
- C108 1.7 By mutual agreement of the Administrations concerned the gentex call number of the office of destination may be entered into the pilot line immediately following the number of chargeable words and separated from it by a space.
- C109 1.8 *Exceptions to provisions C31 to C101*
- C110 1.8.1 The signals, service codes and abbreviations (bell signal, **RPFR**, **MOM**, etc.) proper to the gentex service to announce or to draw attention to an abnormal situation must not be used.
- C111 1.8.2 Except where otherwise agreed, only the clearing signal may be used to interrupt transmission. In this case the calling station shall recommence transmission at the beginning of the interrupted telegram.
- C112 1.8.3 An error noted after the end-of-message signal **NNNN** has been sent will be corrected by sending a service advice.
- C113 1.8.4 Except where otherwise agreed, the answer-back code of the receiving station correctly received at the end of transmission serves as proof of reception for all classes of telegrams.
- C114 1.8.5 Repetition of a telegram that has already been completely transmitted will be effected in the form of a service advice (see D25 to D32 and D39).
- C115 1.9 *Example of the recommended format for transmission between the gentex network and the telegram retransmission system*

☒ <=
 1299RC NYC UI<=
 4144A DARMST D<=
 ZCZC DP4144A154<= ¹
 UINY HL DPDA 027<= ²
 JUGENHEIM A D BERGSTRASSE 27/24 12 1926<== ==

LT <=
MISS GISELLA COHEN<=
67 BROADSTREET<=
NEWYORK(10004)<==

1000 DOLLARS CABLED TO NEWYORK THROUGH SWISS<=
BANK CORPORATION STOP PLEASE CABLE IF NOT<=
RECEIVED LOVE<=
DADDY<== 3

NNNN ☒ <= 4,5
1299RC NYC UI<=
4144A DARMST D

- ¹ In the direction gentex to telegram retransmission system only the telegram identification group shall be transmitted. In the direction telegram retransmission system to gentex all preceding channel sequence numbers and the telegram identification group will be transmitted.
- ² The pilot line may be omitted when transmitting to systems that do not demand it.
- ³ Minimum of five spaces before the signature.
- ⁴ Ten letter-shifts follow NNNN, except in relations that do not require them.
- ⁵ The symbol ☒ indicates the *Who are you?* signal.

DIVISION D

TELEGRAPH SERVICE CORRESPONDENCE

I. Telegraph service correspondence

1 Definitions

- D1 1.1 *Service telegrams* are telegrams that relate to public international telecommunication and are exchanged between:
- D2 1.1.1 Administrations;
- D3 1.1.2 Recognized private operating agencies;
- D4 1.1.3 Administrations and recognized private operating agencies;
- D5 1.1.4 Administrations and recognized private operating agencies on the one hand and the Secretary-General of the ITU on the other hand.
- D6 1.2 *Service advices* relate to details of service or to the working of circuits and telegraph offices and to transmission of traffic. They shall be exchanged between telegraph offices. They may also be initiated by the sender or addressee of any telegram to give instructions or to obtain information about that telegram.

II. Service telegrams and service advices

1 General provisions

- D7 1.1 Service telegrams and service advices must be used only where essential and must be worded as briefly as possible. Telegraph offices and all persons authorized to use service telegrams shall take all necessary steps to restrict, so far as practicable, the number and length of those telegrams (see C98).
- D8 1.2 Service telegrams may be exchanged between Administrations and recognized private operating agencies on the one hand and the Secretary-General of the ITU, the Chairman of the Administrative Council of the ITU, the Director of the CCITT, the Director of the CCIR and the Chairman of the IFRB and all persons authorized to use service telegrams on the other hand relating to the official business of the ITU.
- D9 1.3 They shall be expressed in any of the working languages of the ITU⁶⁾ unless the Administrations concerned have agreed to use another language.
- D10 1.4 Service telegrams and service advices shall be denoted by the service indication: A.
- D11 1.5 The priority of transmission of service telegrams and service advices is shown in A136 to A144.

⁶⁾ The possible difficulties that might arise for certain Administrations due to the use of Spanish language in service advices will be considered further by Study Group I.

2 Service telegrams

- D12 2.1 Service telegrams must contain in the preamble line the name of the office of origin, the number of actual words and the date and time of issue or handing in. Service telegrams may have a signature (see D40).
- D13 2.2 Service telegrams must bear a registered address (see A77).

3 Service advices

3.1 General provisions

- D14 3.1.1 The object of a service advice concerning a telegram already transmitted or in course of transmission is in most cases either to correct an error or to give instructions about the telegram. Such service advices are initiated by one of the offices having taken part in the transmission of the original telegram.
- D15 3.1.2 During the minimum period for preservation of records, after first, if necessary, establishing their status and identity, the sender or the addressee (or their authorized representative) of any telegram that has been transmitted may, by service advice, either:
- a) give instructions as to the delivery of the telegram following receipt of a service advice notifying its non-delivery; or
 - b) have information obtained as to the identity of the sender.

3.2 Procedure

3.2.1 End-to-end servicing

- D16 3.2.1.1 End-to-end servicing is a mode of operation in which the service advices are passed between the office of origin and the office of destination of the relevant telegram without interception at transit offices for the purposes of adding the serial and/or the channel sequence numbers of the original telegram as references.
- D17 3.2.1.2 This mode of operation should be used whenever practicable.

3.2.2 Follow-on service advices

- D18 3.2.2.1 A follow-on service advice is a voluntary correction or inquiry initiated by the office of origin of the subject telegram. The originating office shall quote as reference the following particulars of the original telegram:
- D19 a) the serial numbers shown in the numbering line together with the date (the number(s) and date in one group separated by a fraction bar);
 - D20 b) the service indications (if any);
 - D21 c) the name of the addressee;
 - D22 d) the address (excluding the office of destination);
 - D23 e) the signature (if any).

D24 3.2.2.2 The service advice should, as far as practicable, be forwarded on the same route as the original telegram. Transit offices may add their own serial number to the references given.

3.2.3 *Return service advices*

D25 3.2.3.1 A return service advice is a notification or an enquiry (request service advice) initiated by the office receiving a telegram or a reply (reply service advice) to a service advice received.

D26 3.2.3.2 Return service advices (except reply service advices, see D30) shall quote as references the following particulars of the original telegram:

D27 a) all the serial numbers shown in the numbering line together with the date (the number(s) and date in one group separated by a fraction bar);

D28 b) service indications (if any);

D29 c) the name of the addressee.

D30 3.2.3.3 In reply service advices the reference numbers and the date should be those of the request service advice followed by a space and the references of the subject telegram given in the request service advice.

D31 3.2.3.4 Return service advices shall be addressed to the office of origin of the subject telegram or the request service advice.

D32 3.2.3.5 Any transit office that can, without inconvenience or delay, collect the information needed for acting on the service advice shall do so, otherwise it shall send the service advice on to its destination.

3.3 *Wording*

D33 3.3.1 Service advices must contain in the preamble line the name of the office of origin, the number of actual words and the date and time of issue (see D41).

D34 3.3.1.1 Offices may add to the name of the office of origin the name, in abbreviated form, of the branch issuing the service advice.

D35 3.3.1.2 The address part of a service advice shall include the service indication A and the name of the office of destination with, if necessary, the additions mentioned in D34 if any (see D42).

D36 3.3.2 The text of a service advice shall quote all particulars necessary to facilitate the tracing of the subject telegram in accordance with D18 to D23 and D25 to D30.

D37 3.3.3 Service advices shall preferably be worded by using the code expressions appearing in *Codes and Abbreviations for the Use of International Telecommunication Services* [7].

D38 3.3.4 Examples of format and wording of service advices are shown in D41 to D45.

3.4 *Repetition of a telegram*

D39 3.4.1 Where a repetition of an individual telegram is required by an office using the special provisions for the telegram retransmission system, the request shall be included in a service advice to the office sending the series (or the office of origin, if appropriate). The repetition should be included in the text of a reply service advice deleting any start-of-message and end-of-message signals on the subject telegram.

III. Examples of format and wording of service correspondence

D40 Service telegram (see D12 and D13)

<=
ZCZC ALI402 SVC529<=
PCSV CN HXSV 000<=
HONGKONG x 6 0838<= ==

A<=
INOCRAM<= ==
LISBON<= ==
text<=
signature<= == == == == == == ==

NNNN (ten letter-shifts)

D41 Service advice (see D33)

<=
ZCZC GHA444 SVC711<=
GBBM CN HXSV 000<=
HONGKONG x 6 0840<= ==

A<=
BIRMINGHAM<= ==
text<= == == == == == == ==

NNNN (ten letter-shifts)

D42 Service advice (see D34 and D35)

<=
ZCZC LBA123 SG42<=
INBY CN GBLB 000<=
LONDON/MRC x 4 1030<= ==

A<=
BOMBAY<= ==

text<= == == == == == == ==

NNNN (ten letter-shifts)

x indicates number of actual words.

D43 Advice of non-delivery (see A191)

<=
ZCZC ASV632 LHZ221 QLH53<=
GJBA CN GBLH 000<=
LONDON/LH 7 19 1841<= ==

A<=
BAHRAIN<= ==

ZLH082/VSA197/COF5259/19TH JOHNSTON<=
14/A VICTORIASTREET RUCOS<= == == == == == == ==

NNNN (ten letter-shifts)

D44 Correction of address (see A194)

<=
ZCZC ZLH971 VSA197 LD39 <=
GBLH CN GJBA 000 <=
BAHRAIN 8 20 1005 <= ==

A <=
LONDON/LH <= ==

ASV632/LHZ221/QLH53/19TH ZLH082/VSA197/COF5259/19TH <=
JOHNSTON JEHAT 144/A VICTORIA STREET <= == == == == == ==

NNNN (ten letter-shifts)

D45 Non-delivery problem solved (see A198)

<=
ZCZC HGA456 LDC222 QLD12 <=
HXSX CN GBLD 000 <=
LONDON/LD 5 19 1145 <= ==

A <=
HONGKONG <= ==

CLD234/GHB197/CA2653/18TH SCHMIDT PYSAT <= == == == == == ==

NNNN (ten letter-shifts)

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.
- [2] *International Telecommunication Convention*, ITU, Nairobi, 1982.
- [3] *List of telegraph offices open for international service*, ITU, Geneva.
- [4] *List of coast stations*, List IV, Part IV, Volume I, ITU, Geneva.
- [5] CCITT Definition: *Position A; position Z*, Vol. I, Fascicle I.3 (Terms and Definitions).
- [6] *Routing table for offices taking part in the gentex service*, ITU, Geneva.
- [7] *Codes and abbreviations for the use of the international telecommunication services*, ITU, Geneva.
- [8] *List of indicators for the telegram retransmission system and telex network identification codes*, ITU, Geneva.
- [9] *General Information relating to the Operation of the International Telegraph, Data Transmission and Telematic Services, (facsimile, teletex, videotex, etc.)* ITU, Geneva.

PLAIN AND SECRET LANGUAGE

The CCITT,

considering

(a) Article 27 of the International Telecommunication Convention (Nairobi, 1982) concerning the use of secret language in telegrams;

(b) the general provisions in Recommendation F.1 on the preparation and handing in of telegrams;

(c) the CCITT studies on simplifying the international public telegram service and increasing its cost-effectiveness;

(d) that the provisions governing the international telex, telematic and data transmission services do not restrict the language or content of messages transmitted by these services, nor would it be practicable to apply restrictions in subscriber-operated services without withdrawing automatic operation or otherwise disrupting the quality of service;

(e) that, nonetheless, it may be necessary for an ITU Member to impose restrictions on the content of telegrams transmitted from its territory or received from another country;

(f) that where an ITU Member elects to impose language restrictions on telegrams received from another country, this should not unduly burden the operation of the service in that country,

declares the view

that the following procedures shall apply regarding the use of plain and secret language in the international telegram service.

1 Definitions

1.1 **plain language** consists of words that present an intelligible meaning in one or more of the languages admitted for international telegrams, which include at least French, English and Spanish in every relation. Each word and each expression has a meaning normally assigned to it in the language to which it belongs. A text in plain language may contain:

- a) numbers written in letters or figures;
- b) proper names or abbreviated addresses;
- c) groups comprising letters, figures, signs or any combination of them providing that they have no secret meaning.

1.2 **secret language** comprises words in which one or more consist of:

- a) groups of letters, figures, signs or any combination of them that have a secret meaning;
- b) words in plain language that are not used with the meaning normally assigned to them;
- c) any other words not fulfilling the conditions laid down for plain language.

2 General principles

2.1 All ITU Members shall accept in all relations the use of plain language in messages sent or received by any public international telecommunication service.

2.2 At least the three working languages of the Union (French, English and Spanish) shall be admitted as plain language in all relations.

2.3 In order to facilitate efficient working and convenience for the users of telecommunication services, all ITU Members should also normally admit telegrams wholly or partly in secret language. In any case, government telecommunications and service telecommunications may be expressed in secret language in all relations. Except in the case of suspension of services defined in Article 20 of the Convention, any telecommunication containing secret language shall also be allowed to pass in transit from one country to another.

2.4 Exceptionally, where an ITU Member finds it necessary to impose language restrictions on international telecommunications, for example pursuant to Article 19 of the Convention (stoppage of telecommunications):

- a) the Member concerned shall make all necessary arrangements regarding any restrictions on messages originating within its own territory;
- b) except where appropriate bilateral agreements are reached, it shall also accept the final responsibility for stopping any non-compliant messages originating in other countries, although origin Administrations should assist to the extent reasonable and practicable;
- c) the Secretary-General should be advised of the restrictions so that he can then advise all Administrations promptly through the *Operational Bulletin*.

3 Telegrams with secret language

3.1 If requested by the origin Administration, the sender of a telegram in secret language must produce the code or identify the dictionary language used in drafting the telegram. Administrations may also require the sender to produce a translation of the telegram into plain language or a language acceptable to the Administration. This provision shall not apply to government telegrams.

3.2 If the origin Administration considers it appropriate, or, in relations where so agreed to meet the requirements of the destination Administration, the office of origin should insert the name of the code and/or language used in such a telegram at the end of the preamble line as a service instruction, which is not chargeable. It may not be convenient for this procedure to be applied with some types of lodgement.

3.3 In cases where a destination Administration receives a telegram (other than a government telegram) wholly or partly in non admissible language, that Administration:

- a) may require the addressee to produce a translation of the telegram; or
- b) shall make every effort to identify the commercial code or language used and check that the translated text is then acceptable; and
- c) shall advise the origin Administration where a) or b) causes late delivery as defined in Recommendation D.42 (which shall nevertheless not be grounds for a refund of charges to the originator); or
- d) shall inform the origin Administration by service advice when either the original telegram cannot be translated or when the translated text contravenes national law (neither case shall be grounds for a refund of charges to the originator).

3.4 Further to point c) of § 2.4 above, any Administrations wishing to impose language restrictions shall advise the Secretary-General of their requirements both for lodgements within their country and for reception from other countries in terms of:

- a) languages other than French, English and Spanish admitted as plain language;
- b) commercial or other standard codes admitted;
- c) whether identification in the preamble line of the code or language used is desired;
- d) whether secret language as defined in § 1.2, other than b) above is not admitted.

**CHARACTER ERROR RATE OBJECTIVE
FOR TELEGRAPH COMMUNICATION
USING 5-UNIT START-STOP EQUIPMENT**

The CCITT,

considering

- (a) that it would be useful to have a common standard for assessing the quality of telegraph communications;
- (b) that the character error rate [1] of a telegraph communication would be suitable for this purpose;
- (c) that a defined error rate objective should be established;
- (d) that all forms of current wideband transmission techniques have intrinsic characteristics that make some errors economically unavoidable;
- (e) that occasional bursts of errors occur (errors that are concentrated into a relatively short time interval, i.e. seconds),

unanimously declares

- (1) that the quality of service must be the same for telegraph communication in the public telegram service, the telex service and the leased circuit service;
- (2) that the objective, irrespective of transmission media and intervening equipment, should be an error rate not greater than 3 in 100 000 alphabetic telegraph signals transmitted;
- (3) that the error rate objective should have not less than a 95% probability;
- (4) that, in the determination of error rate, measurements should be made for relatively long time periods, i.e. for at least several hours (see Note 1);
- (5) that the effects of operator error rates (e.g. in the public telegram service) and of local ends and their terminations (e.g. teleprinters) should be excluded when determining the error rate.

Note 1 — The minimum time interval should include the busy hour and be of at least 12 hours duration.

Note 2 — The absolute value for the error rate objective requires further study.

Reference

- [1] CCITT Definition: *Character error rate*, Vol. I, Fascicle I.3 (Terms and Definitions).

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

SECTION 2

THE GENTEX NETWORK

Recommendation F.20

THE INTERNATIONAL GENTEX SERVICE

The CCITT,

unanimously declares

- (1) that the following provisions should be adopted for the gentex service;
- (2) that Administrations should make arrangements for their offices to apply these provisions.

1 General

- 1.1 The gentex network is made up of telegraph offices, switching centres and telegraph channels, interconnecting the offices to switching centres and the switching centres to each other.
- 1.2 The gentex network is operated by fully automatic switching.
- 1.3 Gentex signalling shall be in accordance with CCITT Recommendations relative to telegraph switching technique.

2 Call-numbers and answer-back codes

- 2.1 Unless other arrangements are made, the call-number dialled by a gentex office to call a gentex office in another country is made up of:
 - the prefix giving access to the called country from the calling country;
 - the call-number of the called office, which must comprise figures only, up to a maximum of 8 figures; the call from the national network or another number especially selected for the purpose.
- 2.2 The answer-back codes of the equipment used in the genetex service are made up of 20 signals.
- 2.3 The composition of answer-back codes shall be in accordance with the provisions of Recommendation F.21.

3 Equipment of positions in telegraph offices

- 3.1 Transmitting or receiving positions in the gentex service shall be equipped with tape-printing or page-printing teleprinters using International Telegraph Alphabet No. 2, possessing an answer-back unit and able to work, if necessary, in simplex.

3.2 Positions shall be equipped for the following:

- the setting-up of calls;
- the clearing of calls;
- reception of the bell (figure J) signal;
- an alarm or transmission of the clearing signal if the paper runs out.

3.3 As far as possible, these positions shall also be equipped to signal the following:

- equipment out of service;
- tape broken;
- faulty tape feed.

3.4 In an office, the positions used in the gentex service can be grouped into those specializing in transmission and those specializing in reception. Administrations shall arrange this specialization so that the incoming grade of service shall not be less than the CCITT recommended limits.

3.5 Both-way and incoming-only positions in the same office shall all have a common call-number. When one of these positions is engaged or faulty, a call arriving at that office shall be directed to a free position in the same group.

4 Routing lists

4.1 All countries taking part in the gentex service shall draw up a routing list containing information about the routing of traffic, and shall supply this list to the ITU for distribution to the other countries concerned. This list shall comprise:

- a) the telegraph offices connected to the gentex network. The sign ◇ shall precede the name of every office taking part in telegram transmission only, but available for a direct call when service correspondence has to be exchanged;
- b) offices that, while not connected, normally deal with a fair amount of international traffic.

4.2 Routing lists should be of the A4 size (210 × 297 mm) and should contain the following information:

- a) in the first column, the alphabetical list of the offices chosen in accordance with § 4.1 above (names of telegraph offices connected to the gentex network are in heavy type);
- b) in the second column, the call-number of the gentex office to be called for routing traffic to the office shown in the first column, with no restriction sign (a space is left in this column for inserting the prefix or prefixes to obtain access to the country concerned);
- c) in the third column, the answer-back codes of the offices connected to the gentex network, or of the gentex office serving an office that is not connected to this network (without the characteristic letter or letters of the specialized receiving positions);
- d) in the fourth column, the service hours of offices connected to the gentex network or of the gentex office serving an unconnected office, or in the indication *office which merely transmits*; service hours are given in local time. Some office work different hours on Sundays and public holidays, in which case the column is sub-divided and a list of public holidays is given at the beginning of the list. The abbreviations used in this column have the following meanings:

N = office permanently open (day and night),
P = office with extended service,
— = office closed;

- e) in the fifth column, the name of the gentex office that should be called for alternative routing when the office given in the third column is closed, out of order or engaged. This information may also be provided in the preliminary note.

4.3 This list shall be preceded by a preliminary note indicating the routing of telegrams to offices not mentioned in the list.

4.4 When certain important gentex offices possess specialized positions to deal with service notes and advices, or specialized positions for the reception of fault notices, the call-numbers and answer-back codes of such positions shall appear in an annex to the routing list.

4.5 If a gentex exchange is equipped with an automatic test-phrase transmitter (with or without distortion) the call-number of such a transmitter shall also be indicated in this annex.

4.6 Exemplar of the first part of a routing list and this annex appear in Tables 1/F.20 and 2/F.20 respectively.

TABLE 1/F.20

GERMANY (Fed. Rep. of)

Bureau télégraphique Telegraph office Oficina telegráfica	Central gentex desservant le bureau Gentex office serving the office Central génplex que sirve la oficina					Détournement en cas de clôture du service, d'occupation ou de dérangement du central gentex Alternative routing when the gentex office is closed, engaged or out of order Desviación en caso de cierre del servicio, de ocupación o de avería de la central génplex	
	Pré- fixe Pre- fix Pre- fijo	N° d'appel Call No. N.º de llamada	Indicatif Answer-back code Distintivo	Heures de service (H.E.C.) Service hours (C.E.T.) Horas de servicio (H.E.C.)			
				Lundi au Vendredi Monday to Friday De lunes a viernes	Samedi Saturday Sábado		Dimanches et jours fériés Sundays and holidays Domingos y días festivos
1	2	3	4a	4b	4c	5	
Aachen	8311	8311 AACHEN D	N	N	N	7711 FREIB D	
Aalen, Wuertt	7411	7411 ULM D	N	N	N		
Achern, Baden	7511	7511 OFFBG D	07-22	07-22	07-19		
Ahrensburg	2071	2071 HAMB D	N	N	N		
	2031*	2031 HAMB D					
Alfeld, Leine	9111	9111 HAN D	N	N	N	4811 GSSN D	
	9031*	9031 HAN D					
Alsdorf, Rheinl	8311	8311 AACHEN D	N	N	N		
Alsfeld	4911	4911 FULDA D	07-22	07-22	07-21		
Altena, Westf	3111	3111 DTMD D	N	N	N		
	3031*	3031 DTMD D				5111 MCHN D 5031* MCHN D	
Altoetting	5611	5611 TRAUN D	07-22	07-20	07-20		
Amberg, Oberpf	6511	6511 RGSB D	N	N	N		
Andernach	4411	4411 KBLZ D	N	N	N		
Ansbach, Mittelfr	6111	6111 NBG D	N	N	N		
	6031*	6031 NBG D				3111 DTMD D 3031* DTMD D	
Arnsberg, Westf	3811	3811 MESCH D	07-22	07-22	07-22		
Arolsen	9411	9411 KASSEL D	N	N	N		
Aschaffenburg	4071	4071 FFM D	N	N	N		
	4031*	4031 FFM D					
Augsburg	5311	5311 AUGSB D	N	N	N	3111 DTMD D 3031* DTMD D	
Backnang	7111	7111 STGT D	N	N	N		
	7031*	7031 STGT D	N				
Bad Aibling	5111	5111 MCHN D	N	N	N		
	5031*	5031 MCHN D					
Bad Berleburg	3211	3211 SIEGEN D	07-22	07-22	07-22		
Bad Ems	4411	4411 KBLZ D	N	N	N		

*Positions de réception avec téléimprimeurs sur page – Receiving positions with page-printers – Posiciones de recepción con teleimpresores en página.

TABLE 2/F.20

NUMÉROS D'APPEL DES POSITIONS SPÉCIALISÉES EN RÉP. FÉD. D'ALLEMAGNE
CALL NUMBERS OF SPECIALIZED POSITIONS IN FED. REP. OF GERMANY
NÚMEROS DE LLAMADA DE LAS POSICIONES ESPECIALIZADAS EN REP. FED. DE ALEMANIA

Service <i>Service</i> Servicio	Numéro d'appel <i>Call Number</i> Número de llamada	Texte des émetteurs d'indicatifs <i>Text of answer-back codes</i> Texto de los transmisores de distintivo
1	2	3
Position de renseignement – <i>Information position</i> – Posición de información: Frankfurt am Main Hamburg	4058 2058	4058 FFM INF 2058 HAMB INF
Position de réception des avis de dérangement – <i>Position for reception of faulty notices</i> – Posición de recepción de avisos de avería: Frankfurt am Main Hamburg	4051 2051	4051 FFM TCHN 2051 HAMB TCHN
Position de mesure de la distorsion arythmique – <i>Position for the measurement of start-stop distortion</i> – Posición de medida de la distorsión arrítmica: Frankfurt am Main Hamburg	4054 2054	410961 TPRMPL 210961 TPRMPL
Emetteur central de texte avec distorsion – <i>Central transmitter of text with distortion</i> – Transmisor central de texto con distorsión: Frankfurt am Main Hamburg	4041 2041	} pas d'émetteur d'indicatif no answer-back code no hay transmisor de distintivo
Emetteur central de texte sans distorsion – <i>Central transmitter of text without distortion</i> – Transmisor central de texto sin distorsión: Frankfurt am Main Hamburg	4045 2045	

5 Telegram routing

- 5.1 Telegrams to an office that, whether or not connected to the gentex network, appears in the routing list shall be routed using the call number shown in the List.
- 5.2 Telegrams to an office that does not appear in the routing list shall be routed in accordance with the instructions given at the beginning of the routing list of the country in which the office is located.

6 Overflow

6.1 Administrations may make arrangements for calls to be automatically routed to overflow positions when all the receiving positions of a called office are busy.

7 Prohibition of communications with telex subscribers in other countries

7.1 An office connected to the gentex network shall not, under any circumstances, call a telex subscriber in another country. Where possible this prohibition shall be effected by the switching equipment.

7.2 Arrangements should also be made to prevent telex subscribers from obtaining access to gentex offices.

8 Operation of the gentex service

8.1 The gentex service shall be operated in accordance with provisions in Recommendation F.1.

Recommendation F.21

COMPOSITION OF ANSWER-BACK CODES FOR THE INTERNATIONAL GENTEX SERVICE

The CCITT,

considering

(a) that the answer-back code sent by teleprinter equipment in the gentex service should provide as much useful information as possible for the operational services. Procedures for checking answer-back codes should be simple and speedy because the average time taken to transmit the text of a telegram in the gentex system is about one minute and this means that roughly every minute three answer-back codes have to be checked by the operator (two at the beginning of the telegram, the answer-back code of the station obtained and the answer-back code of the calling station, and one at the end: the answer-back code of the station obtained);

(b) that the answer-back code in the international gentex service should therefore include the call-number of the office and as much of the name of this office as possible;

(c) that it is also essential to show in the answer-back code one or two characteristic letters of the country in which the teleprinter equipment is situated, for the worst routing mistake is that of sending a telegram to the wrong country;

(d) that Administrations may identify, by additional letters in the answer-back code, not only the office but also the nature of the position in the office (outgoing position, incoming position), or the identity of the position among all similarly specialized positions, so as to facilitate the location of any faults in the equipment of the tracing of any telegrams in dispute;

(e) that the initial letters of the alphabet: A, B, C, etc., are to be used for identifying specialized outgoing positions and one of the final letters of the alphabet Z, Y, X, etc. for identifying specialized incoming positions. For very large offices, where groups of machines having the same specialized function, outgoing or incoming, may comprise more than 12 machines, it will be necessary to use additional specialization letters:

T to indicate a position specializing in transmission;

R to indicate a position specializing in reception;

(f) that if an office that uses letters denoting specialization is also equipped with combined incoming/outgoing positions, such positions will be identified by the same specialization letter as the incoming positions;

(g) that should outgoing or incoming groups comprise more than 26 machines, the letters S and Q, denoting outgoing or incoming specialization respectively, may be used in conjunction with the letters T and R, thus increasing the possibility of identification in a group of machines to 52;

(h) that in the case of overflow positions, they must indicate very clearly the name of the office obtained, for this name belongs to an office other than the one called. For this purpose, the call-number of the overflow office will not appear in the answer-back code of such a position, so as to leave space for the name of the office as complete as possible and the characteristic indication **DEB**, which has been chosen to denote *overflow*;

(i) that because machines in the gentex service can be page-printing machines, it is necessary to provide carriage-return and line-feed signals at the beginning of the answer-back code and for technical reasons the last character of the answer-back code must be the letter-shift signal,

unanimously declares

(1) that answer-back codes of machines used in the international gentex service should be made up of 20 signals;

(2) that, for machines other than those used on positions specialized for receiving overflow traffic, the series of 20 signals in the answer-back code should, in principle, be as follows:

- carriage-return,
- line-feed,
- figure-shift,
- the figures of the call-number by which the office is to be called when a telegram is sent to it [in some large offices a position (or group of positions) may specialize in dealing with service advices, and in this case it is provided with a special call-number and answer-back code — see §(6) below],
- letter-shift,
- space,
- letters indicating as explicitly as possible the name of the office,
- space,
- the characteristic letters of the name of the country, in accordance with the code listed under § (9) below,
- letter-shift.

Note — Some teleprinters are permanently arranged to transmit letter-shift as the first character of the answer-back. In this case the letter-shift should precede the carriage-return and will reduce the number of characters available for the name of the office by one.

(3) that, for Administrations that wish to give the specialization and identity of the positions with which equipment is associated in large offices, the series of 20 signals in the answer-back code should be made up as follows, according to the size of such offices:

- carriage-return,
- line-feed,
- figure-shift,
- the call number as indicated under §(2),
- letter-shift,
- one or two letters chosen in accordance with Table 1/F.21,
- space,
- the name of the office,
- space,
- the characteristic letters of the name of the country,
- letter shift;

(4) if, in the exchanges referred to in § (3) above, combined incoming/outgoing positions are used in addition to specialized incoming or outgoing positions, the answer-back codes of these combined positions should be composed in the same way as the answer-back codes of a specialized incoming position;

(5) The specialization letter T should be preferred to the letter S, and the letter R to the letter Q; the letters S and Q should be used only when such use is justified by the exchange equipment;

TABLE 1/F.21

Size of office	For a specialized outgoing position	For a specialized incoming position
Large office	one letter from A to L	one letter from Z to O
Very large office	the letter T and one letter from A to Z	the letter R and one letter from A to Z
Exceptionally large office	the letter T or the letter S and one letter from A to Z	the letter R or the letter Q and one letter from A to Z

(6) that, for the positions specialized in dealing with service messages, the series of 20 signals of the answer-back code should be as follows:

- carriage-return,
- line-feed,
- figure-shift,
- the call-number of the specialized position or group of positions,
- letter-shift
- space,
- the name of the office,
- space,
- letters **INQ**,
- letter-shift;

(7) that, for positions specialized in the reception of overflow traffic, the series of 20 signals in the answer-back code should be as follows:

- carriage-return,
- line-feed,
- letter-shift,
- position identification letter(s),
- space,
- the name of the office,
- space,
- letters **DEB**,
- letter-shift;

(8) that, if an answer-back code does not fill the 20 places available, the unused places should be filled by the necessary number of space signals between the name of the office and the country code;

(9) that the characteristic letters of names of countries should be the same as the telex network identification code shown in the *List of Destination Indicators and Telex Network Identification Codes* [1] with the exception of the countries below, which use the characteristic letters shown:

CS	Czechoslovakia	I	Italy
GB	United Kingdom	L	Luxembourg

Reference

- [1] *List of indicators for the telegram retransmission system and telex network identification codes*, ITU, Geneva.

Recommendation F.23

GRADE OF SERVICE FOR LONG-DISTANCE INTERNATIONAL GENTEX CIRCUITS

The CCITT,

considering

that the main purpose of the gentex service is to ensure that traffic shall be passed without delay, whilst also ensuring a sufficient use of groups of long-distance international circuits intended to carry traffic,

unanimously declares

that the grade of service corresponding to a loss probability of 1 in 50, as set out in Table 2/F.64, should apply to the groups of long-distance international circuits used in the gentex service.

Recommendation F.24

AVERAGE GRADE OF SERVICE FROM COUNTRY TO COUNTRY IN THE GENTEX SERVICE

The CCITT,

considering

(a) that Recommendation F.23 gives a recommended grade of service for groups of long-distance international circuits used in the gentex service but;

(b) that it would be helpful for outgoing countries to be certain that the gentex calls can be put through with a loss probability sufficient to maintain the grade of gentex service without delay working;

(c) that small offices connected to the gentex network cannot ensure, at the incoming end, a very high grade of service, otherwise their equipment would be uneconomically used;

(d) that it is sufficient for an outgoing country to be able to count on an average grade of service for all gentex calls to a given incoming country,

unanimously declares

(1) that it is helpful to define an average grade of service between countries for gentex calls;

(2) that this grade of service should be expressed as the proportion of calls that reach the incoming country participating in the gentex service, but that fail to get through to its gentex stations; and

(3) that this grade of service should not involve more than an average of 1 lost call in 10 during the busy hour on a normal day. Calls routed to an overflow position are considered as successful calls.

SECTION 3

MESSAGE SWITCHING

Recommendation F.30

USE OF VARIOUS SEQUENCES OF COMBINATIONS FOR SPECIAL PURPOSES

The CCITT,

unanimously declares that

(1) when it is necessary to provide for switching of telegrams to different routes in semi-automatic or fully automatic telegram retransmission systems, the beginning and ending of each telegram are identified by the insertion of start-of-message and end-of-message signals;

(2) the start-of-message signal consists of the sequence **ZCZC** in letter case;

(3) the end-of-message signal consists of the sequence **NNNN**, in letter case;

(4) the equipment that recognizes the start-of-message and end-of-message signals may be designed to do so by searching only for the sequence of four combinations corresponding to **ZCZC** or **NNNN** respectively (i.e. combinations 26, 3, 26, 3 or 14, 14, 14, 14 in International Telegraph Alphabet No. 2 regardless of whether they are in letter or figure case);

(5) Table 1/F.30 lists other sequences of combinations used for special purposes.

TABLE 1/F.30

Purpose of sequence	Sequence of combination	Printed position		Recommendation reference
		Letter case	Figure case	
Connection of reperforator (or equivalent device)	3 3 3 3	CCCC	: : : :	S.4
Disconnection of reperforator (or equivalent device)	6 6 6 6	FFFF	Note 1	S.4
Suppression of delay signals	8 8 8 8	HHHH	Note 1	S.4, U.22
Ready for test	11 11 11 11	KKKK	((((	R.79, R.79 bis
Switching a reader (or equivalent device) into circuit by remote control	11 12 11 12	KLKL	(())	S.4
End of message or enabling of delay signals	14 14 14 14	NNNN	, , , ,	F.1, F.31, S.4, U.22
Change of alphabet	19 19 19 19	SSSS	' ' ' '	S.15
Error signal	24 24 24 24 24	XXXXX	/////	F.1 (C94)
Start of message	26 3 26 3	ZCZC	+ : + :	F.1, F.31
End of input	26 26 26 26	ZZZZ	+ + + +	F.200
Request for automatic advice of parties cleared prematurely during the broadcast call followed by call cleared	13 13 13 13 Note 3	MMMM Note 3	Note 2	S.4, U.44

Note 1 — As noted in Recommendation F.1, § C4, the figure case of combinations 6, 7 and 8 is available for the internal service of each Administration.

Note 2 — As noted in Recommendation U.44 this sequence is to be recognized in letter case only.

Note 3 — A minimum of 4 Ms would clear a telex broadcast call. The usage of a 5th or more Ms is a national matter.

Recommendation F.31

TELEGRAM RETRANSMISSION SYSTEM

(a) For the routing of telegram traffic, Administrations can use the *Telegram Retransmission System*. This system comprises a network of interconnected telegram retransmission centres, which carry out the switching and retransmission functions. The indications needed to route the telegram are included with the telegram when it enters the system and are retransmitted with the telegram from one centre to another.

(b) The offices where telegrams enter or leave the telegram retransmission system are linked to at least one retransmission centre; such offices are described as *linked* offices. In the case of a particular telegram, the linked office through which the telegram enters the system is known as the linked entry office; the linked office through which the telegram leaves the system is known as the linked exit office.

(c) The present Recommendation has been drawn up for fully automatic working, but may be used for semi-automatic and manual working.

(d) To facilitate world-wide operation of the telegram retransmission system, to simplify the transfer of telegrams between the retransmission network and other networks and to enable the switching and accounting equipment needed for the retransmission centres to be designed, the CCITT,

unanimously declares that

1 Each telegram must be treated independently, even if several telegrams for the same destination arrive in series at a linked entry office.

2 The format to be used in preparing the telegram for transmission shall be as follows:

2.1 The heading of the telegram shall start with the *numbering line* preceded by a carriage-return, a line-feed and a letter-shift. The numbering line consists of:

2.1.1 *The start-of-message signal (SOM)*

In accordance with Recommendation F.30 the start-of-message signal (SOM) is made up by the sequence of combinations Nos. 26, 3, 26, 3 of International Telegraph Alphabet No. 2 (ZCZC) followed by:

2.1.2 *The channel sequence number*

Telegrams transmitted over a channel shall be numbered according to a series of numbers for each channel. The channel sequence number will therefore be composed of three letters characteristic of the channel used (channel indicator) followed by a number showing the order of this telegram in the series sent over this channel. The channel sequence numbers shall be in sequence from 001 to 999 and change automatically from 999 to 001 at the end of a numbering cycle.

When the telegram passes from one channel to another in a network, each new channel sequence number shall be inserted immediately after the start-of-message signal. The channel sequence numbers will appear in the numbering line of the telegram in the opposite order to that in which the telegram passed through the network.

The channel sequence number shall be transmitted as:

- space;
- three letters constituting the channel indicator;
- figure-shift;
- three figures constituting the number in the series on the channel.

Service advices will be numbered in the channel series unless agreed otherwise by the Administrations concerned. The channel sequence number(s) is followed by:

2.1.3 *The telegram identification group (TIG)*

The telegram identification group enables the office of origin to recognize the telegram. This group must not exceed 15 printing characters, which may be composed of any combination of letters and/or figures. In the special case of a telegram from the gentex network to the telegram retransmission system, the telegram identification group will be the only reference in the numbering line and will consist of two letters identifying the originating country or a particular network therein (in accordance with Recommendation F.96), the call number of the gentex office followed by one or two letters identifying the gentex position and the serial number of the telegram which that position sends.

The telegram identification group shall be transmitted as:

- space;
- letter-shift (if necessary);
- not more than 15 printing characters;

followed by:

2.1.4 *End of line*

- carriage-return;
- line-feed;

which will mark the end of the numbering line, followed by:

2.2 The second line of the heading, the *pilot line*, which consists of:

2.2.1 *The destination indicator*

This indicator is extracted from the *List of Destination Indicators and Telex Network Identification Codes* [1], and consists of four letters; the first two characterize the destination country (or a particular network in the destination country) and the following two letters characterize an office of that country (see also § 4 below).

The destination indicator shall be transmitted as:

- letter-shift;
- four letters;

followed by:

2.2.2 *The priority and tariff indicator*

This indicator consists of two letters chosen in such a way that the priority letters of the indicator differ from each other by at least two unit elements and the same letter does not appear twice in the same indicator, thus reducing the possibilities of error.

2.2.2.1 The first letter will designate the priority of transmission according to the following table:

- A** — Telegrams relating to safety of life (**SVH**)
- B** — Telegrams relating to the application of the United Nations Charter (**ETATPRIORITE**)
 - Government telegrams with priority (**ETATPRIORITE**)
 - Meteorological telegrams (**OBS**)
 - Ordinary private telegrams with urgent transmission and delivery (**URGENT**)
 - **RCT** telegrams with urgent transmission and delivery (**URGENT RCT**)
 - Money orders and postal cheque telegrams with urgent transmission and delivery (**URGENT POSTFIN**)
- C** — Government telegrams (**ETAT**)
 - Service telegrams (**A**)
 - Service advices (**A**)
 - Ordinary private telegrams
 - **RCT** telegrams (**RCT**)
 - Money orders and postal cheque telegrams (**POSTFIN**)
 - Telemesssage
- H** — Letter telegrams (including government letter telegrams) (**LT, LTF**)

This table takes account of the order of transmission given in Recommendation F.1, A136 to A144.

2.2.2.2 A telegram that has been abnormally delayed can be upgraded to a higher priority group. Such promotion can be effected only in the linked entry office; in this case, a category **H** telegram could be marked **C** and a category **C** telegram marked **B**, but a telegram with lower priority than **A** can never be promoted to category **A**.

2.2.2.3 The *second letter* will designate the tariff class to be used according to the following table:

- F** Radiotelegrams routed via a foreign land station;
- J**² **POSTFIN** telegrams¹⁾;
- K** Government telegrams where preferential rate is to be charged;
- L** Letter telegrams;
- M** Meteorological telegrams;
- N** Non-chargeable telegrams;
- O** Ordinary private telegrams;
- Q**² Telegrams involving special accounting features¹⁾;
- R** **RCT** telegrams;
- T** Telemessages
- U** Telegrams (other than **RCT** telegrams) with urgent transmission and delivery;
- V**² Divided telegrams¹⁾;
- X** For use by transit offices when inserting the pilot line on transit telegrams;
- Y** Government full-rate telegrams;
- Z** Government letter-rate telegrams.

¹⁾ Where there is a choice of tariff indicator the one marked with a ² takes precedence.

2.2.2.4 Letters D, E, G, I, P, S and W are available for assignment when required.²⁾

The priority and tariff indicator shall be transmitted as:

- space;
- two letters;

followed by:

2.2.3 *The origin indicator*

The origin indicator consists of four letters; the first two will be the same as those used in the destination indicators for the originating Administration or network; the third and fourth will represent:

- a) a particular city or town within that country or network; or
- b) the office or department to which service correspondence regarding the telegram should be addressed.

Administrations may select the last two letters to satisfy the requirements of their internal organization but where there is more than one entry point to a country or network from any station the choice of letter combinations must be negotiated with that station where they differ from the destination indicator for the office in question. Administrations that take advantage of this facility should notify the CCITT of the origin indicators in use in their system.

The origin indicator shall be transmitted as:

- space;
- four letters;

followed by:

2.2.4 *The number of chargeable words*

The number of chargeable words shall be transmitted in the form of a three-figure number (for example **009**) using the number of chargeable words shown in the preamble line for the telegram in question. For a non-chargeable telegram the number **000** will be shown.

The number of chargeable words shall be transmitted as:

- space;
- figure-shift;
- three figures;

followed by:

2.2.5 *A customer identification group (optional)*: This group characterizes the customer for accounting purposes and can be composed of any combination of letters and/or figures. It will not be transmitted beyond the first retransmission centre. (See also Recommendation F.1 C108.)

The customer identification group shall be transmitted as:

- space;
- the customer identification group;

followed by:

2.2.6 *End of line*

- carriage-return;
- line-feed;

which will mark the end of the second line (pilot line), followed by:

²⁾ Administrations may agree mutually to accept additional tariff indicators.

2.3 The third line of the heading which is the *preamble line* and which shall be transmitted as shown in Recommendation F.1, A140 to A144, including any service instructions, followed by:

- carriage-return;
- three line-feeds;

followed by:

2.4 *The address part*³⁾

2.4.1 *The service indication line* (where required)

Any service indications should be placed on a separate line immediately before the address. Each indication shall be transmitted as one word. If there are several indications each will be separated by a space.

The service indication line is transmitted as:

- letter-shift (if necessary);
- the service indications;
- carriage-return;
- line-feed;

followed by:

2.4.2 *The address lines*

The address of a telegram shall be transmitted as:

- letter-shift (if necessary);
- the address;
- the name of the office of destination isolated in the last line (see Recommendation F.1, A39 to A100);
- carriage-return;
- three line-feeds;

followed by:

2.5 *The text part*

2.5.1 *The text* shall be transmitted as:

- letter-shift (if necessary);
- text;
- carriage-return;
- line-feed (if signature present) or – ten line-feeds (if no signature present).

2.5.2 *The signature* shall be transmitted as:

- minimum five spaces;
- signature;
- carriage-return;
- ten line-feeds.

2.6 *The end-of-message signal (EOM)*

In accordance with Recommendation F.30 the *end-of-message signal (EOM)* shall be transmitted as:

- letter-shift;
- NNNN;
- ten letter-shifts (except where not required).

³⁾ For postal addresses, the address part (including service indication line) should be composed of a maximum of six lines preferably not exceeding 30 printing/spacing characters. An address part of five lines of up to 43 printing/spacing characters each shall be accepted.

2.7 Format examples

Annex A gives an example of the format of a typical ordinary private telegram showing all the functional signals. Formats of other telegrams will be found in Recommendation F.1.

3 Choice of destination indicator

3.1 The linked entry office of the telegram retransmission network selects the destination indicator to be entered in the pilot line of a telegram.

3.2 Apart from the exceptions given in §§ 4.3, 4.4 and 4.5 the destination indicator shall be selected from the *List of Destination Indicators and Telex Network Identification Codes* [1] (see Recommendation F.96) according to the rules in Table 1/F.31.

3.3 Administrations wishing to do so may use the destination indicator *all others* (or one of the *all others* indicators) of the country of the office concerned for the telegrams to an office appearing in the *List of Indicators* [1], but not directly connected to the telegram retransmission network.

3.4 By private agreement between the Administrations concerned, the destination indicator to be used for each town of a country may be selected from any of the destination indicators for the country according to the internal routing of the country.

3.5 For return service advices, etc., relating to a telegram, the destination indicator shall be the origin indicator given in the telegram.

4 Routing

4.1 Within a telegram retransmission centre, a telegram shall be directed to the following channel in the chain of connections by the destination indicator shown on the pilot line of the telegram, in accordance with the traffic circulation scheme of the telegram retransmission centre.

4.2 If the appropriate subsequent route for the telegram is not connected with the telegram retransmission equipment, the destination indicator shall direct the telegram to a place in the centre where it can be handled and reforwarded.

TABLE 1/F.31

Rules for selecting the destination indicator

	A A single network in destination country	B	C
		Several networks in destination country	
		Telegram showing routing	Telegram not showing routing
1. Destination town directly connected with telegram retransmission system, or to which a destination indicator is allocated	Use destination indicator given in the <i>List</i> against the town concerned	Use destination indicator with the two letters for the network in the <i>List</i> followed by the two letters for the town in the <i>List</i>	Use destination indicator with the two letters for <i>unrouted</i> for the country concerned followed by the two letters for the town in the <i>List</i>
2. Other destinations	Use destination indicator <i>all others</i> given in the <i>List</i> for destination country	Use destination indicator with the two letters for the network in the <i>List</i> , followed by the two letters corresponding to <i>all others</i> for the country concerned	Use destination indicator with the two letters for <i>unrouted</i> for the country concerned, followed by two letters for <i>all others</i> for the country

5 Tolerances as to the format and checking of format

5.1 Switching equipment shall tolerate:

- a) a space and letter-shift transposition or a space and figure-shift transposition in a sequence normally prescribed as having to be a space followed by a shift;
- b) the repetition of a function signal, except for the space between the destination indicator and the priority indicator;
- c) the reception of characters between successive end-of-message signals and start-of-message signals (for example: spurious signals, letter-shifts or other functional signals) without affecting the proper functioning of the equipment. (Any transmission from the sending end of a channel between an end-of-message signal and the subsequent start-of-message signal should be limited to those characters that have a function at the receiving end of the channel.)

5.2 If a repetition or a transposition in the sequence carriage-return, line-feed, letter-shift separating the numbering line from the pilot line cannot be tolerated by the switching equipment, the telegram affected by such a defect will be directed towards a manual service position.

5.3 Any deviation from the format that might be recognized by a centre and that goes beyond the acceptable tolerances as given herein shall as far as possible be corrected before retransmission to another switching centre.

5.4 If the operator in preparing a telegram detects an error in the set-up of the numbering line or the pilot line, he must destroy the part already set up and start preparation of his telegram again. But if the transmission of these two lines has already started, the operator shall send the code expression **ANUL** space **ANUL** followed by ten line-feeds and the end-of-message signal. Any telegram so terminated shall not, if possible, be retransmitted by the first switching equipment to receive it.

6 Protection against loss of telegrams

6.1 *Transmission*

6.1.1 Whenever a retransmission is made, a channel sequence number is sent, showing the channel used for retransmission and the sequence of the telegram on that channel.

6.1.2 During the retransmission, a telegram interrupted by the code expression **ANUL ANUL** followed by the EOM sequence is considered as not transmitted. This telegram must be retransmitted with its original channel sequence number without other indication.

6.1.3 A check must be made in every retransmission centre, either automatically or by an operator, to prove that every telegram received is retransmitted.

6.2 *Reception*

6.2.1 A check is made to verify the regular sequence of the channel numbers of telegrams received on each incoming channel. Should there be any irregularity, an alarm will warn the supervisory staff.

6.2.2 During reception, a telegram interrupted by the code expression **ANUL ANUL** followed by the EOM sequence is considered as not received. This telegram must be received again in a complete way with its original channel sequence number without other indication.

6.3 *Mutilation*

6.3.1 If there is a mutilation of the text of a telegram, the incident will be dealt with by end-to-end servicing since the alteration will be noted in practice only at the linked exit office.

6.3.2 If there is a mutilation of a channel sequence number, which may be noted automatically when entering an office, a request for re-run, by service advice, as applicable, indicating the queried sequence number, will be sent to the preceding office on the channel chain, which will then re-run the telegram in question.

6.3.3 For enquiries about a telegram whose telegram identification group has been mutilated, investigation will be made by going back along the route from office to office and by identifying the telegram by means of operating information.

7 Starting of motors

7.1 In general the motors of terminal equipment will always be running, at least on intercontinental circuits.

7.2 However, the two Administrations concerned may agree to operate a channel with terminal equipment fitted with time-delay devices to start and stop the motor. They will agree mutually on arrangements for controlling the start of the motor. The provisions of Recommendation S.7 seem to be the most applicable.

8 Use of tape-printing equipment

8.1 Recommendation S.5 should be followed with regard to the use of tape-printing equipment in the telegram retransmission system.

9 Offices operated semi-automatically or manually

9.1 For offices that are connected to fully automatic systems, Administrations should follow as closely as possible the format recommended in this Recommendation.

9.2 Other offices should also follow the recommended format on any telegram that will enter the telegram retransmission system on a second or subsequent link.

10 Automatic service procedures

10.1 *Re-runs and Put-backs*

10.1.1 A re-run is the repetition, between two directly connected centres of offices, of one or more telegrams that have previously been sent.

10.1.2 A put-back involves stopping a transmission on a channel, recommencing at a particular telegram previously transmitted and continuing from there.

10.1.3 Re-runs and Put-backs should only consist of information that was initially transmitted. Request for re-runs will only occur between the directly connected centres concerned. Telegrams so repeated shall be transmitted under their original channel sequence numbers only.

10.1.4 If a re-run of any telegram is given automatically by a telegram retransmission centre, such re-run should be restricted to that telegram retransmission centre or linked office to which the traffic was initially transmitted, or a centre or linked office to which the traffic has been diverted.

10.2 *Automatic service notes*

10.2.1 Automatic service notes are designed to initiate an automatic action at a telegram retransmission centre. They may or may not be generated automatically, but they shall be numbered in the normal sequence.

10.2.2 Automatic service notes should only be sent from stations that work directly to the distant automatic retransmission centre at which the action is to be taken.

10.2.3 Where automatic action is required, the numbering line may also be composed of:

ZCZC ABC000 or ZCZC XQ

10.2.4 Automatic service notes shall contain a pilot line with a special destination indicator composed of the country code followed by **ZZ**; the **B** priority indicator must be used.

10.2.5 A preamble line may appear in these notes, but it may be in abbreviated form, e.g. a date and time group only.

10.2.6 The text must commence with a four-letter code designating the action required:

RRUN for re-run,

PUTB for put-back (retransmission of all the telegrams, starting from a given number),

BK BK for break,

SITU for situation,

GAGA for go ahead (after an interruption in the traffic).

10.2.7 Automatic service notes and responses shall conform to the layout in Annex A.

10.3 *Automatic re-runs and put-backs (commands **RRUN** and **PUTB**)*

10.3.1 Where a centre can automatically generate re-runs and put-backs, these should normally be available on request from another directly connected centre during the 24 hours following the original transmission of the telegrams in question.

10.3.2 Automatic re-run of a maximum of ten telegrams may be requested in a single service note.

10.3.3 Put-back of a maximum of 50 telegrams may be requested in a single service note (**PUTB**).

10.3.4 The telegrams referred to in a request for automatic re-run or put-back shall all bear the same original channel indicator.

10.3.5 Automatic re-runs and put-backs should take place over the channel used for the transmission of the original telegram(s). However, they may also be sent over the original route, but not necessarily over the original channel, if the two Administrations concerned have agreed to this course in advance.

10.3.6 Where automatic answer is not given immediately, the reply must be made manually subsequently.

10.3.7 The same format should also be used by centres that have access to automatic repetition facilities at a distant centre but that have to prepare failure notes manually.

10.4 *Automatic stoppages and re-starts of transmission (commands **BK BK** and **GAGA**)*

10.4.1 Automatic stoppage and re-start of transmission should be available on request from any directly connected centre.

10.4.2 Both facilities should be possible, either stopping or re-starting on one specified channel or on all channels of a relation.

10.4.3 In the case of a general break command from a telegram retransmission centre, a service note including a numbering line consisting only of **ZCZC XQ** and having a special destination indicator **XQXQ** in the pilot line shall be used to notify all connected Administrations.

10.5 *Automatic situation requests (command **SITU**)*

10.5.1 Where a Centre can automatically provide the channel sequence numbers of the last telegram received and the last telegram sent, this should normally be available on request from another directly connected Centre.

10.5.2 The information shall contain the time to which the situation refers.

10.5.3 The information given should include the situation for all channels on the same route.

10.6 *Automatic continuity checks (**LRLS**)*

10.6.1 Sixty minutes after the last message received or sent on a circuit, a continuity check message shall be sent.

10.6.2 The format of this message is identical to the reply (**LRLS**) to a situation request.

ANNEX A

(to Recommendation F.31)

Format examples

A.1 Ordinary private telegram with service indication (showing all functional signals)

<=
↓ ZCZC→AOE↑262→↓LDB↑814→↓PLD↑606<=
↓ AASD→CO→GBLD→↑018<=
↓ LONDON↑/↓LD→↑18/16→22→1430<===

↓ LX<=
HARRIS<=
↑ 2462→↓SOUTHERNHIGHWAY<=
SYDNEY<===

CONGRATULATIONS→ON→YOUR→PROMOTION→AND<=
BEST→WISHES→FOR→THE→FUTURE<=
→→→→JOHN<== == == == == == == == ==

↓ NNNN↓↓↓↓↓↓↓↓↓↓

A.2.1 Service note requesting automatic re-run of one message

ZCZC ABC000 <= (or ZCZC XQ)
DPZZ BN FRZZ 000 <= (ZZ if request is generated automatically, XQ otherwise)
PARIS 21 0926 <== (optional or abbreviated in case of request only)

RRUN BCA165 <== == == == == == == == ==

NNNN

A.2.2 Service note requesting automatic re-run of several messages in a sequence (maximum ten messages)

ZCZC XQ <=
DPZZ BN FRZZ 000 <=
PARIS 21 0926 <== ==

RRUN BCA286/293 <== == == == == == == == ==

NNNN

A.2.3 Service note requesting automatic re-run of several non-consecutive messages (maximum five)

3 first lines identical <== ==

RRUN BCA123 141 162 173 <== == == == == == == == ==

NNNN

A.3 *Service note requesting put-backs (maximum 50 messages)*

3 first lines identical <= = =

PUTB BCA123 <= = = = = = = =

NNNN

A.4.1 *Service note with break command on a specific circuit*

3 first lines identical <= = =

BK BK BCA <= = = = = = = =

NNNN

A.4.2 *Service note with break command on all circuits in a relation*

3 first lines identical <= = =

BK BK <= = = = = = = =

NNNN

A.4.3 *Service note with break command consecutive to a system failure*

ZCZC XQ <=

XQXQ BN FRXQ 000 <=

Preamble line optional <= = =

BK BK <= = = = = = = =

NNNN

A.5.1 *Service advice to restart the traffic on a specific circuit*

ZCZC ABC000 <=

DPZZ BN FRZZ 000 <=

Preamble line optional <= = =

GAGA BCA <= = = = = = = =

NNNN

A.5.2 *Service note to restart the traffic on all circuits of a relation*

ZCZC XQ <=

DPZZ BN FRZZ 000 <=

Preamble line optional <= = =

GAGA <= = = = = = = =

NNNN

A.6.1 *Service note for a situation request*

ZCZC LPA000 <=
FRZZ BN GXZZ 000 <=
LONDON 9 1027 <== == (optional)

SITU <== == == == == == == ==

NNNN

A.6.2 *Reply format to the § A.6.1 request*

ZCZC PLA000 <=
GXZZ BN FRZZ 000 <=
PARIS 9 1031 <== == == (complete preamble compulsory)

LRLS LPA074 PLA444 <=
LPB570 PLB009 <=
MISSING LPA040/043 <=
LPB551 554 560 <== == == == == == == ==

NNNN

References

- [1] *List of indicators for the telegram retransmission system and the telex network identification codes*, ITU, Geneva.
- [2] *List of telegraph offices open for international service*, ITU, Geneva.

Recommendation F.35¹⁾

**PROVISIONS APPLYING TO THE OPERATION OF AN INTERNATIONAL
PUBLIC AUTOMATIC MESSAGE SWITCHING SERVICE FOR EQUIPMENTS
UTILIZING THE INTERNATIONAL TELEGRAPH ALPHABET No. 2**

The existence of message switching systems in various countries creates the need for international agreement on operational rules. This service, hereafter described, can be offered by the Administration, on an international basis, following a preliminary agreement by the Administrations concerned.

The CCITT,

considering

(a) that message switching services are based on a technique of providing storage, routing and retransmission of messages;

(b) that the existence of present terminals and systems utilizing the International Telegraph Alphabet No. 2 justifies the provision of a Recommendation for an automatic message switching service;

¹⁾ Formerly numbered F.150 in the Red Book.

(c) that terminals and systems in use conform to the relevant CCITT Recommendations;

(d) that the application of operational rules in this kind of environment does not preclude the development of messaging services,

unanimously declares

that the following provisions should be applied when a public message switching service is being provided internationally for equipment utilizing the International Telegraph Alphabet No. 2.

1 General

1.1 The *format* to be used shall comprise a layout with the following basic components:

- the identification line,
- the routing line,
- the origin line,
- the text.

1.2 *Length of messages*

As a general rule, the length of messages should not exceed 10 000 printed characters, spaces or separators. Nevertheless, Administrations may establish a different limit by bilateral agreement.

1.3 *Sequence of signs*

The uninterrupted repetition of any sign shall be tolerated up to a number of characters corresponding to a printed line varying in length according to the mode of operation used. Beyond this limit, the message shall be refused; subsequent signs forming part of the repetition shall be ignored.

1.4 *Routing*

Messages shall be routed on circuits and systems in accordance with arrangements and modalities agreed between the Administrations concerned.

As a rule, each system shall only receive messages for direct retransmission to national users.

When difficulties arise in this routing, only the standby circuits and systems previously designated as such shall be brought into use. If, however, the standby equipments previously agreed upon prove to be inadequate owing to the special nature of the difficulty, the traffic may be routed on other circuits or systems with the prior agreement of the Administrations concerned or of instances appointed by them for the purpose.

To avoid critical obstruction of the system or systems used for emergency routing, traffic cannot be deviated until the agreement of the Administrations concerned has been obtained; any restrictions placed on the deviation must be observed.

1.5 *Service traffic*

Service traffic exchanged through a system must conform with the example given in § 5.2. In all cases, the reference data relating to the original message must appear at the beginning of the text of the service correspondence. These data must in no case be preceded by other information.

In cases directly concerned with interworking between systems, the service traffic must be addressed to the system itself.

1.6 *Effects of one system on another*

Traffic between two directly interconnected systems may be affected by the following commands:

- an order to the partner to stop and then to resume his transmission;
- a request to repeat messages;
- a request for a load position notice.

These commands shall follow the format shown in § 5.2 and shall be addressed to the corresponding system. The first word of the text indicates the action to be taken.

According to the degree of development of the system, the reaction may be automatic or set off by the operator.

1.7 *Overloading of systems*

Precautions must be taken against overloading.

The system shall signal the moment when a critical load threshold is reached, so that appropriate measures can be taken before the situation deteriorates further.

As far as possible, the system shall complete reception of messages in progress before taking action.

1.8 *Procedure to be applied in the event of total interruption of the system*

When the interruption is planned (maintenance), the partners shall be notified as far as possible in advance.

When it is formally established that a sudden interruption will last longer than 2 hours, all the partners concerned shall be notified without delay and informed of the measures to be taken or, where applicable, of the application of measures planned for the provisional remedy of such system failures.

As soon as normal operation of the system is restored, the correspondents shall be informed without delay.

1.9 *Period of preservation of archives*

1.9.1 *For automatic access*

An automatic message retransmission system should, as far as possible, be so designed as to allow direct access, for purposes of repetition or settlement of disputes, to messages transmitted by the system for at least the past 24 hours.

1.9.2 *For deferred access*

Archives relating to the deposit and transmission of messages shall be kept for at least 2 weeks as from the day following the deposit of the message.

1.10 *Terminals directly connected to the centre of another Administration*

When connection to a national centre cannot be effected, a terminal may exceptionally be connected to the centre of another Administration, with the consent of the Administrations concerned.

1.11 *Tolerances*

1.11.1 At *reception*, a system must be capable of admitting tolerances whereby recourse to human interpretation is reduced to a minimum.

For maximum efficiency, these tolerances shall, as far as possible, be adapted to the errors most commonly encountered in operation. Nevertheless, errors liable to interfere with the routing or correct treatment of the message shall be excluded.

Unless otherwise agreed, messages which cannot be processed, automatically or manually, and character sequences not recognized as messages shall be notified to the transmitting station by an appropriate message. This message shall be set out in the format described in § 5.2 and shall contain in the text the references of the original message (identification line) and the reason for refusal.

1.11.2 At *transmission*, the system must strictly observe the criteria of the agreed format, irrespective of the tolerances admitted at reception.

1.11.3 Departures from these rules may be permitted only with the consent of the Administrations concerned.

2 Message

The format to be used to prepare a message for transmission is as follows:

2.1 Identification line

The heading of the message is formed by the identification line which comprises:

2.1.1 Start-of-message signal (SOM)

This signal, normally composed of the sequence of Combinations Nos. 26, 3, 26, 3 of International Telegraph Alphabet No. 2 (ZCZC or + : + :), may vary according to the mode of operation used. It is followed by the channel serial number.

2.1.2 Channel serial number

Transmission numbering shall be applied serially to each point-to-point circuit and each terminal using the switched network. The channel serial number consists of three letters characterizing the circuit (circuit indicator) or terminal used, followed by the order number of the message carried on the circuit, exchanged with the terminal. The channel serial numbers shall be followed by 001 to 999, with automatic transfer from 999 to 001 at the end of the numbering cycle.

At each retransmission, a new channel serial number shall be inserted immediately after the start-of-message signal. The channel serial numbers shall appear in the identification line of the message in the opposite order to the one in which the message was transmitted.

The length of the identification line must not exceed 69 printed characters. Where necessary, the penultimate channel serial number of the identification line shall be erased and replaced by a new one; the last channel serial number of the identification line shall always be retained, because it also serves as the identification group of the message.

The identification line shall be followed by the routing line.

2.2 Routing line

The routing line comprises:

2.2.1 Priority indicator

The priority indicator, preceded by at least one "line change" order, consists of two letters and indicates the following four priorities:

- QS means that the message is very urgent
- QU means that the message is urgent
- QN means that the message is normal
- QD means that the message can wait.

Systems should be capable of identifying these four priorities at reception, but can deal with only two priorities at transmission, confusing QS with QU and QN with QD. A message containing no mention of priority or containing a mention other than the ones listed above shall be regarded as a normal message and shall be marked with the code QN at output.

The priority indicator shall be followed by the routing indicator.

2.2.2 Routing indicator

The routing indicator shall be composed of an alphanumerical group of three to seven characters agreed upon by the Administrations concerned. The signs "–" (dash) and "/" (oblique) are also admitted.

A message may comprise up to 32 routing indicators distributed over one or more lines, each of which can designate one or more addressees. The message delivered to the addressee shall contain only the indicator which relates to him.

The routine line is followed by the origin line.

2.3 Origin line

The origin line is preceded by at least one "change of line" order, followed by the full stop sign (.). The origin line comprises:

2.3.1 *Origin indicator*

The origin indicator is composed in accordance with the criteria set out in the first paragraph of § 2.2.2. The space between the full stop and the origin indicator is optional.

The origin indicator may be followed by references.

2.3.2 *References*

These references are optional and may be provided either by the sender or by the system of origin. They shall have no effect on the processing of the message.

The length of the origin line must not exceed one printed line of 69 characters.

The origin line shall be followed by the text.

2.4 *Text*

Preceded by at least one “change of line” order.

The format of the text is subject to no special criteria. With regard to the content, the “start-of-message” (SOM) and “end-of-message” (EOM) signals and specific signs or combinations not authorized by a given mode of operation (cf. the relevant sections) shall not be used.

The text is followed by the end-of-message signal (EOM).

2.5 *End-of-message signal (EOM)*

This signal, preceded by at least one “change of line” order, is normally composed of the sequence of combinations No. 14, 14, 14 of International Telegraph Alphabet No. 2 (NNNN or ,,,). This signal may, however, vary according to the mode of operation used.

2.6 The format to be used to prepare a *service message* is the same as that stipulated for an ordinary message (see §§ 2.1 to 2.5).

Comments and orders may be expressed in the abbreviated form described below.

An example of such a message is given in § 5.2.

3 **Mode of operation on asynchronous point-to-point circuits**

3.1 *Start of message*

Group ZCZC or + : + : indicates the start of the message (SOM).

3.2 *End of message*

Group NNNN or ,,,, indicates the end of the message (EOM).

3.3 *Sequence of function signs*

The combination of function signs (→ <≡ ↑↓) does not affect the analysis and treatment of the message.

3.4 *Routing of traffic*

Messages are routed on circuits and systems in accordance with the arrangements and modalities agreed upon between the Administrations concerned.

When two systems are connected by several circuits, the traffic shall be distributed over each usable circuit, if possible.

3.5 *Repetition of messages*

Messages shall be repeated only at the request of the partner. There are two kinds of repetition:

3.5.1 *Repetitions in the form of service notices (retrievals)*

These are generally used to repeat messages already completely transmitted. The channel serial number of the original transmission must appear in the service notice.

3.5.2 *Repetitions in the same form as the first transmission (rerun, put-back)*

Messages shall be repeated in exactly the same form as the original transmission, i.e. in the same order, with the same identification and the serial number and via the same circuit.

3.6 *Specific rules for transmission*

3.6.1 *Interruption of transmission*

After restoration of the situation, the interrupted message should, as a rule, be repeated with the same serial number.

3.6.2 *Cancellation of a message in the course of transmission*

Any message that has begun may be cancelled by transmitting:

ANUL NNNN

The channel serial number shall be reassigned to the following message.

The cancelled message shall be neither processed nor transmitted, but shall be kept in the archives.

3.6.3 *Special signs*

Transmission of characters D, F, G and H in the form of figures and of combination No. 32 is subject to prior agreement.

3.6.4 *Tolerances*

No tolerance shall be admitted for the transmission of messages.

3.7 *Specific rules for reception*

3.7.1 *Irregularities at reception*

a) *Absence of start-of-message criterion*

The system memorizes the signs received until it recognizes an end-of-message (EOM) sequence or until an irregularity c), d) or e) below appears.

b) *Absence of end-of-message (EOM) criterion*

This causes the message to be rejected.

c) *Pause*

A pause may be defined as a period during the reception of a message in the course of which no data signal is received. If the pause lasts longer than 30 seconds, the system rejects the message.

d) *Repetition of signs*

Repetition of signs in excess of the tolerances given in § 1.3 causes the message to be rejected.

e) *Interruption of circuit*

An interruption is equivalent to a lapse of reception time of at least one character. Appropriate measures shall be taken to avoid loss of messages.

Note — Rejection of the message is held to mean the sending of a notice to the transmitting station or, where applicable, its routing to a forward transfer position (see § 1.11.1).

3.7.2 *Special signs*

The presence of characters F, G and H in the form of figures and of combination No. 32 shall not affect reception availability.

As far as possible, the presence of characters D in figure case shall be admitted under the same conditions.

3.7.3 *Tolerances*

Any tolerances that might be admitted at reception must not be liable to cause the loss, mutilation or duplication of messages.

4 **Switched network mode of operation (telex)**

The rules applicable to the establishment of calls, transmission of messages and disconnection of calls shall be those set out in Recommendation F.60.

4.1 *Start of message*

Group ZCZC or + : + : indicates the start of the message (SOM).

4.2 *End of message*

Group NNNN or ,,, indicates the end of the message.

4.3 *Cancellation of a message during transmission*

Any message that has begun may be cancelled by transmitting:

ANUL NNNN

The two answerback codes must then be released and the channel serial number must be reassigned to the following message.

The cancelled message shall not be processed or retransmitted, but shall be kept in the archives.

5 **Examples of formats**

5.1 *Format of ordinary message*

ZCZC PMS036 (Note 1)

QN STOU DHF (Note 2)

.MARSBRD 77/11 REF 132 (Note 3)

TEXT

NNNN

Note 1 – Identification line comprising the start-of-message (SOM) signal and one channel serial number.

Note 2 – Routing line comprising the priority and routing indicators.

Note 3 – Origin line comprising the indicator of origin and optional references.

5.2 *Format of service message*

ZCZC SWF226

QU CENTREB

.CENTREA

COMMENTAIRE/COMMANDE

NNNN

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

SECTION 4

TARIFFS AND ACCOUNTING METHODS FOR THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

Recommendation F.41

OPERATIONAL PROVISIONS FOR PARTICIPATION IN THE TRANSFERRED ACCOUNT TELEGRAPH AND TELEMATIC SERVICE¹⁾

1 Definition

1.1 The **international transferred account telegraph and telematic service** is a service in which the Administrations concerned agree that the charge for telegraph and telematic services be paid by a party that has accepted responsibility for payment, instead of being paid by the sender.

1.2 This service shall be known as the *TA Service*.

1.3 The term **guarantor Administration** as used herein refers to the Administration responsible for the collection of TA charges and for the payment of such charges to the Administration of origin of TA traffic.

2 Correspondence admitted

2.1 The TA service applies to all telegraph and telematic services available at public telegraph offices on a TA basis and may include:

- a) telegrams and radio telegrams;
- b) telex and radiotelex calls from a public booth;
- c) phototelegrams and phototelegraph calls handed in at public telegraph offices;
- d) switched data calls through a public telegraph office;
- e) document facsimile calls at a public telegraph office;
- f) teletex calls from a public booth;
- g) videotex calls at a public booth.

¹⁾ See also Recommendation D.98.

2.2 In principle, TA telegraph and telematic services can be requested only by the holder of a TA card and only on presentation of the card.

2.3 The TA service is an optional service. The Administrations that agree to participate in it shall inform the ITU General Secretariat thereof and shall also indicate which of the telegraph and telematic services mentioned in § 2.1 above are provided in the TA service. The General Secretariat shall keep a table of the information received.

3 Provisions concerning users

3.1 *Requests for admission*

3.1.1 Application for admission to the TA service must be made to an Administration and include the following particulars:

- a) the full name of the person (or full title of the corporate body) wishing to use the TA service;
- b) the full name and address of the person or corporate body responsible for payment of the charges;
- c) duration of validity requested for the TA card.

3.1.2 The request for admission to the TA service shall be submitted to the Administration of:

- a) the country in which the person or corporate body responsible for payment of charges is resident; or
- b) any other country participating in the service.

3.1.3 The Guarantor Administration may request the customer responsible for payment of the charges to make a guarantee deposit, the amount of which shall be fixed by the Administration.

3.1.4 TA cards shall not be transferable. The period of validity shall not exceed one year.

3.2 *Withdrawal of the right to use the TA service; lost or stolen TA cards.*

3.2.1 The Administration authorizing the use of the TA service shall reserve the right to withdraw its authorization, given just cause, and the holder of the TA card must then surrender it on request.

3.2.2 If a TA card is lost or stolen, the TA card holder or the customer responsible for payment should immediately inform the Administration that issued it or the Administration that authorized its use. On receipt of such advice an Administration that issued the TA card as the agent of an authorizing Administration must notify that Administration as soon as possible.

4 Provisions concerning Administrations

4.1 *Requests for admission*

4.1.1 In the case cited in § 3.1.2 a), admission to the TA service may be authorized directly by the Administration receiving the request.

4.1.2 In the case cited in § 3.1.2 b), the Administration receiving the request should consult with the Guarantor Administration to confirm that the latter agrees to guarantee the charges. Admission to the TA service, and the issue of the TA card, will be contingent on this advance agreement.

4.2 *Establishment of TA cards*

4.2.1 The Administration that receives the request for admission to the TA service shall issue to the applicant a TA card of the standard model or ask the Administration of the country in which the sender is located to issue a TA card.

4.2.2 When the TA card is delivered, the Administration shall give the holder a sheet containing the *Terms of Issue* (see Annex C).

- 4.2.3 The authorizing Administration shall cause the following to be inserted on each TA card:
- 1) The card number comprised of:
 - a) two letters indicating the Administration that issued the card [these letters shall be taken from the *List of Indicators for the Telegram Retransmission System* [1] (Recommendation F.96)];
 - b) a number composed of a maximum of 6 digits, allocated by the Administration issuing the card;
 - c) two letters, chosen as in a), indicating the Guarantor Administration.
 - 2) the expiration date;
 - 3) the name of the card holder;
 - 4) the signature of the card holder;
 - 5) the full name of the issuing Administration;
 - 6) the name and address of the person or corporate body responsible for the payment of TA charges;
 - 7) the signature of an officer of the issuing Administration.
- 4.2.4 Inland cards issued by Administrations for use only within their own country must be quite different in appearance from the ITU cards.

4.3 *Withdrawal of the authorization to participate in the TA service*

4.3.1 In the case of withdrawal of the right to use the TA service where the TA card cannot be obtained from the holder, or in the case of a lost or stolen TA card, the authorizing Administration should immediately notify:

- 1) The General Secretariat so that advice may be placed in the next ITU *Operational Bulletin*; and
- 2) Administrations with whom it is thought TA traffic may be lodged against the TA card.

4.3.2 On receipt of such notification, whether direct or through the ITU *Operational Bulletin*, Administrations should take all reasonable precautions to prevent the TA card being honoured and, if possible, should recover the TA card should it be presented.

4.3.3 Notwithstanding the requirement in § 4.3.2, if the TA card is used in accordance with all other relevant provisions governing the TA service then the authorizing Administration remains liable for payment of charges to the Administration accepting the TA traffic.

4.4 *Treatment of TA traffic*

4.4.1 TA traffic shall be accepted, routed and delivered under the same conditions as other traffic of the same category.

4.4.2 During routing within the origin country, TA telegrams may be completed by various indications for the purpose of accounting checks. Such indications should be deleted before transmission of the telegrams over the international network or appear, only if they are essential, at the end of the preamble line. These should consist of the indication TA, followed or not by other indications.

5 **Provisions concerning the ITU Secretariat**

5.1 *Supply of TA cards*

5.1.1 The General Secretariat shall have TA cards printed in accordance with the specifications laid down in Annex A and on request shall supply such cards to Administrations participating in the service.

5.2 *TA Table*

5.2.1 The ITU General Secretariat shall publish and keep a table in alphabetical order of country, as spelled in the French language, containing the following information in respect of each Administration participating in the TA service:

- 1) the name of the Administration and the abbreviation applicable to it (such abbreviations shall be taken from the *List of Indicators for the Telegram Retransmission System* [1]);
- 2) any surcharges or special charges applicable;

- 3) the address to which correspondence concerning the operation of the TA service should be sent;
- 4) any special observations or instructions;
- 5) appropriate advice if the Administration does not agree both to guarantee TA cards for its own customers and to accept TA cards guaranteed by other Administrations;
- 6) the telegraph and telematic services provided.


5.3 *Notification in the Operational Bulletin*

5.3.1 The ITU General Secretariat shall publish in the *Operational Bulletin* the numbers of the TA cards which may no longer be used (see § 4.3.1).

ANNEX A

(to Recommendation F.41)

Reproduction and specifications of international standardized plastic TA card

UNION INTERNATIONALE DES TELECOMMUNICATIONS		
1. CARD NUMBER	2. EXPIRY DATE	
3. NAME OF THE CARD HOLDER		
4. SIGNATURE OF CARD HOLDER		
<small>SERVICES TÉLÉGRAPHIQUES 電報業務 SERVICIOS TELEGRÁFICOS</small> <small>TELEGRAPH SERVICES ТЕЛЕГРАФНЫЕ СЛУЖБЫ</small>		

5. NAME OF ISSUING ADMINISTRATION
6. NAME AND ADDRESS OF PAYER
7. SIGNATURE OF ISSUING OFFICER

ANNEX B
(to Recommendation F.41)

Instructions for filling in international TA cards

Latin characters and Arabic numerals should be used throughout. The various sections of the card should be filled in, preferably by typewriter, as follows:

Section No. 1

The composition of the card number (or identification group) is specified in the provisions governing the TA service (see § 4.2.3 of this Recommendation).

Section No. 2

Enter the date until which the card is valid. This date should be composed as follows:

- the month (in Arabic numerals); card validity will always expire at the end of the month shown, January, being month No. 1;
- the year (in Arabic numerals).

Section No. 3

Enter here the name of the holder with the surname in capital letters and the first name(s) in small letters.

Section No. 4

Ensure the holder of the card signs here.

Section No. 5

Enter here the full name of the issuing Administration.

Section No. 6

Enter here the name and address of the person or corporate body responsible for the payment of TA charges.

Section No. 7

The signature of an officer of the issuing Administration.

ANNEX C
(to Recommendation F.41)

Terms of issue

- C.1 This card is not transferable.
- C.2 This card must be produced each time a facility duly authorized by the TA service is used.
- C.3 The holder must enter his name and title (Mr., Mrs., etc.) and the number of this card on the official forms used for the TA service.
- C.4 Administrations reserve the right to withdraw at any time the authorization to use this card. The holder must surrender this card on request.
- C.5 This card must be returned to the issuing Administration as soon as the holder is unable or no longer intends to use it, regardless of whether its period of validity has expired or not.

C.6 In case of loss, the issuing or guaranteeing Administration must be informed immediately. Otherwise, the person or corporate body responsible for the payment of charges will be required to pay any charge resulting from fraudulent use of this card.

References

- [1] *List of indicators for the telegram retransmission system and telex network identification codes*, 4th edition ITU, Geneva, 1979.
- [2] *International Telecommunication Convention*, Nairobi, ITU, Geneva, 1982.
- [3] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.

Recommendation F.42

OPERATIONAL PROVISIONS FOR THE COLLECTION OF TELEGRAM CHARGES

1 Collection of charges

- 1.1 The charges shall normally be collected from the sender.

2 Telegrams payable by the addressee or a third party – the TA service

- 2.1 Administrations may, either by participating in the transferred account telegraph and telematic service (the TA service) provided for in Recommendations F.41 and D.98, or by special agreement and at the express request of the addressee or other party undertaking payment, admit telegrams of all classes without payment of charges in the origin country. These charges shall be collected from the addressee or other party undertaking payment.

3 Prohibition of rebates

- 3.1 Administrations shall not grant rebates on the rates appearing in the applicable official tariff lists to senders or addressees of telegrams in any form whatsoever (for example, per word, per telegram, by means of discounts, etc.).

4 Errors in collection

- 4.1 If, owing to an error, a telegram is undercharged, the balance necessary to make up the full charge must be collected from the sender, in accordance with the internal regulations of each country.
- 4.2 Amounts overcharged in error shall be refunded to the sender in accordance with the internal regulations of each country.

SECTION 5

TELEMESSAGE

Recommendation F.50

INTERNATIONAL PUBLIC TELEMESSAGE SERVICE

1 Introduction

1.1 *Scope*

1.1.1 This Recommendation contains the operational provisions for the international public teletext service. This is defined as an international public service provided to enable the transmission of messages input electronically on national public telecommunication networks or by other means, normally for postal delivery in the destination country.

1.1.2 The international public teletext service may operate in parallel with, or as an alternative to, the international public telegram service. The international public teletext service shall provide the capability of operating in conjunction with the international public telegram service in those cases where it is used as an alternative to the international public telegram service.

1.1.3 The tariff principles for the international public teletext service are laid down in Recommendation D.45.

1.1.4 While this Recommendation implies an implementation related to the long established message retransmission system defined in Recommendation F.31 and while § 1.1.2 requires the capability of operating in conjunction with the telegram service, the teletext service is not restricted to the F.31-based techniques which might be regarded as an interim method of providing the service. Rather, further study is required to develop the technical aspects of the service (e.g. character sets and coding, preferred methods of interconnection via public data networks) and also to examine possibilities of intercommunication with other services. Higher level protocols such as those developed for the message handling system services should also be studied.

1.2 *Service definitions*

1.2.1 **teletext service**

The teletext service is an international public service provided to enable the transmission of character coded messages input electronically on public telecommunication networks or by other means normally for postal delivery in the destination country.

1.2.2 **telemesssage**

A telemesssage is a document printed in letter style preferably including the printing of capital and small letters. It includes the address of the recipient, and where requested the sender, normally for delivery by post in a distinctive envelope designed for use with the service.

1.2.3 **telemesssage switching centre**

A unit used to automatically switch international and/or national telemesssage traffic.

1.2.4 **national telemesssage input centre**

An office used for accepting telemesssages.

1.2.5 **national telemesssage distribution office**

An office used for the printing and enveloping of telemesssages for subsequent entry into the mail network (or equivalent).

1.2.6 **printing station**

Equipment used to print messages in the national telemesssages distribution office. The printing station shall be capable of accepting a minimum of 69 printing characters (including spaces) per line.

1.3 *General operating principles*

The telemesssage service is made up of the following elements:

1.3.1 *Processing/switching*

1.3.1.1 Once the telemesssage has entered the telemesssage switching centre, it may be processed to ensure speed and code compatibility, then queued for switching to another point in the network or for onward transmission internationally.

1.3.2 *Transmission*

1.3.2.1 The telemesssage switching centres are connected internationally as outlined in § 4.

1.3.3 *National distribution and delivery*

1.3.3.1 Telemesssages are normally printed locally in national telemesssage distribution offices, which are located to meet the Quality of Service criteria (see § 7).

1.3.3.2 Delivery should normally be achieved by the standard mail service operated in the destination country.

1.3.3.3 Other means of physical or electronic delivery may optionally be offered.

2 **Acceptance of telemesssages**

2.1 Individual Administrations will decide what methods national customers may use to lodge telemesssages. However, in principle it is expected that telemesssages would normally be accepted via a wide range of national subscriber services, such as telephone (including public payphones), telex, teletex, telefax, videotex and by computer inputs.

2.2 In the basic service, and in order to facilitate the required intercommunication with the international public telegram service, the characters used in composing telemesssages may initially be restricted to those available in the telegram service (Recommendations F.1, A.16 to A.18) i.e International Telegraph Alphabet No. 2 (ITA2). Nevertheless, noting the ability to preserve the distinction between capital and small letters in ITA2 where the method of lodgement permits, customers should be encouraged to use capital and small letters, so that in the preferred case where the method of international transmission also allows it, this distinction will be preserved for delivery at destination (national matter).

2.3 In relations where appropriate bilateral agreements exist, the following more extensive character sets should be used in lodging telemessages:

- a) the international reference version of International Alphabet No. 5 (IA5) defined in Recommendation T.50;
- b) the Teletex basic repertoire of graphic characters defined in Recommendation T.61;

2.4 The text and the signature of a telemessage may be written in any language.

3 Telemessage switching centres

3.1 A telemessage switching centre shall, in the basic service, conform to the requirements of a telegram retransmission centre as defined in Recommendation F.31 except where otherwise specified by this Recommendation.

3.2 A telemessage switching centre must be capable of switching ITA2 as described in § 2.2 above.

4 International network requirements

4.1 The telemessage service may utilize by bilateral agreement:

- i) dedicated circuits between telemessage switching centres; and/or
- ii) a public data transmission network; and/or
- iii) the public switched telephone network (or circuits allocated for DATEL services); and/or
- iv) any other network e.g. telex or Gentex.

4.2 Coding of the character sets permitted in §§ 2.2 and 2.3 above shall be in accordance with Recommendations S.1, S.2 (ITA2), T.50 (IA5 IRV), T.61 (Teletex), or others as appropriate.

In these cases the telemessage centres can be interconnected in accordance with the Message Handling System (MHS) Recommendations of the X.400-Series or other protocols by bilateral agreement.

4.3 In the case of transmission in ITA2, distinction between capital and small letters should be retained wherever possible using the coding convention defined for this purpose in Recommendation S.2. This implies that telemessage switching centres (including transit centres) should not delete possible superfluous shift characters, although this is permissible if three or more of them appear in succession.

4.4 The international connection between switching centres may, by bilateral agreement, operate at any modulation rate.

5 Format

5.1 General

5.1.1 In the basic service, telemessages shall be transmitted in a format in conformance with Recommendation F.31 (Telegram Retransmission System), except that the specific provisions below shall apply. Format examples in ITA2 and IA5 are given at Annex A of Recommendation F.50.

5.1.2 Format requirements and protocols for other methods of interconnecting telemessage switching centres (see § 4.2 above) are for further study.

5.2 Message header

5.2.1 The pilot line shall include, apart from the destination and origin indicators as specified in Recommendation F.1 and the number of actual words:

- a) the priority indicator **C** for the standard telemessage service (the priority indicator **B** may be used in conjunction with an optional **EXPRESS** service); and
- b) the tariff indicator **T**.

5.2.2 The actual word count shall include all the words in the text, the signature (if any) and the sender's address (if any). Consequently, the delivery address and the service indication line (if any) are excluded.

5.2.3 The preamble line shall include the office of origin (as specified in Recommendation F.1), the actual word count, date and legal time of acceptance.

5.3 *Delivery address*

5.3.1 *General*

In relations where the telegram and telemesssage services share common facilities, the first line of the address shall begin with the service indication “TELEMESSAGE”¹⁾ followed by a space character and two digits (where appropriate). (For interworking applications see Recommendation F.51.)

5.3.2 *Electronic delivery*

5.3.2.1 When the two digits are **00**, the following address consists of an electronic terminal address including an indication of the service and the network where necessary.

5.3.3 *Postal delivery*

5.3.3.1 When the two digits are other than **00**, they designate one of the deluxe cards (see § 9.1). No digits indicate a standard telemesssage. In both cases the delivery address shall then consist of a postal address.

5.3.3.2 The postal address must include all reasonable requirements for delivery without any enquiries in the destination country. Wherever possible the postal code should be included. In some cases a country code may be added to the postal code. Even where this is not the case, the destination country should not be shown in the address.

5.3.3.3 The postal address will be composed preferably of six lines of up to 30 printing/spacing characters each. In some cases (e.g. intercommunications with the telegram service) a postal address of five lines of up to 43 characters each shall be accepted.

5.3.3.4 The last line, or at most the last two lines, of the address will be used in many cases to switch the telemesssage to the appropriate national distribution office. Accordingly, it (or they) shall consist of the following elements:

- wherever possible the postal code (which may contain letters and/or figures in any order);
- the name of the town or city in a form acceptable to the destination country, which may accept more than one version (e.g. **LONDON, LONDRES**);
- the name (*or an accepted abbreviation*) of the state, province or county (if applicable).

5.3.3.5 The position of the postal code should be in accordance with the requirements of the destination country.

5.3.3.6 Where practicable and convenient, the town or city name should also appear in the last line of the address, preceding the state/province/county name. Otherwise it should be given on its own in the second last line of the address.

5.3.3.7 The relevant list of telegraph offices may be consulted when composing the address.

5.4 *The text and signature*

5.4.1 The text and signature, (if any) of any one telemesssage shall not exceed 35 lines, including blank lines for paragraphing and separating the signature from the text. The number of text and signature (if any) lines can exceed 35 by bilateral agreement. Each line may consist of a maximum of 69 printing/spacing characters with an option, by bilateral agreement, for 80 characters maximum providing service is not via a transit centre.

¹⁾ The word “TELEMESSAGE” may not be printed (national matter)

5.4.2 The text may be freely formatted, e.g. it may include columns, separate paragraphs, etc., as might be expected in a conventional letter. In principle the text shall be transmitted in the precise format accepted from the customer.

5.5 *The sender's address*

5.5.1 The sender's address, which is optional, should follow the signature and should consist of a maximum of six lines of up to 30 printing/spacing characters each.

5.5.2 The last line of the sender's address should be the internationally recognized name (or abbreviation) of the country of origin.

5.5.3 There may be an option for the date and legal time of acceptance in the country of origin to be added by the accepting Administrations on a separate line.

6 **Delivery requirements**

6.1 *Location of national telemessage distribution offices*

In principle, the location of national telemessage distribution offices should be arranged to ensure that the quality of service objectives for the service are met (see § 7).

6.2 *Delivery in destination country*

The telemessage shall normally be entered into the letter service of the destination country for delivery to meet the objectives of quality of service (see § 7).

7 **Quality of Service**

7.1 In any relation, Quality of Service objectives will be established for each class of service in terms of the period of time for delivery of 95% of messages.

7.2 Each Administration shall provide a postal address to which undelivered items should be returned using the appropriate bilaterally agreed method. A telemessage that is considered to be unrouteable should be serviced back to the origin giving the reason and stating that the message has been cancelled.

8 **Retrievals and archives**

8.1 Telemessage switching centres should store all outgoing messages for a minimum of 7 days, so that they can be retrieved for retransmission on request or for investigations.

8.2 Essential accounting information shall be held in archives for a minimum period of 6 months from the time of acceptance. This information shall include:

- a) the customer identification group;
- b) date and time of acceptance;
- c) brief identification of the address (e.g. addressee's name and country);
- d) outgoing route if necessary;
- e) time of transmission.

9 **Facilities**

9.1 *Greetings/deluxe messages*

9.1.1 As an optional service, telemessages may be delivered with a greetings/deluxe card, preferably in a range of designs to suit a number of different occasions.

If a choice is offered then the following range of card types and indications is suggested, although it may be extended or modified. Specific designs chosen are the responsibility of the destination Administration.

- 11 General Greetings
- 22 Weddings
- 33 Adult Greetings
- 44 Child Greetings
- 55 Birth
- 66 Condolences

9.1.2 Any translation of the card indication necessary in the country of destination to effect delivery shall be performed by the terminal teletext switching centre.

9.1.3 If the requested deluxe card is not available in the country of destination, then the General Greetings card should normally be substituted with the possible exception when 66 = (Condolences) has been requested.

9.1.4 However, Administrations that do not admit GREETINGS/DELUXE messages listed in § 9.1.1 must let them pass in transit except in case of suspension of service provided for in Article 20 of the Convention (Nairobi 1982).

9.2 *Cancellation*

The facility to cancel a teletext after it has been accepted is not offered.

ANNEX A

(to Recommendation F.50)

Format examples

A.1 Standard teletmessage in ITA2 with service indication

<=
ZCZC ZYX3174 DGR118 2-3170698 <=
GBXX CT UDNX 084 <=
TDMT AKRON OHIO 84 3 1605 <= ==

TELEMESSAGE <=
MR P C JENKINSON <=
216 GREAT BADDOW STREET <=
WHITTON <=
TWICKENHAM <=
MIDDLESEX TW7 9RY <= ==

WE REFER TO YOUR REQUEST FOR REPLACEMENT PARTS WITH COST FOR YOUR <=
DIATRON SYSTEM. WE HAVE PLEASURE IN SUBMITTING THE FOLLOWING <=
ESTIMATES. <= ==

PART NR.	AVAILABILITY	PRICE	DELIVERY <= ==
263-4719	61	273.70	6 weeks <=
263-4720	12	118.86	2 weeks <=
1973A26	2	1316.00	1 month <=
7168/A6	N/A <=		
7168/A7	22	16.70	in stock <= ==

PLEASE NOTE ALL PRICES ARE US DOLLARS CIF. WE LOOK FORWARD TO <=
RECEIVING YOUR ORDERS. <= ==

HIRIAM P THURSTON <=
AKRON ASSOCIATES <=
3167 MAIN STREET <=
AKRON OHIO 12345 <=
UNITED STATES OF AMERICA <=
4.05 EST 3 July 1986 <= == == == == == == ==

NNNN

<=
ZCZC ZYX3174 DGR118 2-3170698<=
GBXX CT UDNX 079<=
TDMT AKRON OHIO 79 3 1605<== ==

MR P C JENKINSON<=
216 GREAT BADDOW STREET<=
WHITTON<=
TWICKENHAM<=
MIDDLESEX TW7 9RY<== ==

2) WE REFER TO YOUR REQUEST FOR REPLACEMENT PARTS WITH COST FOR YOUR<=
DIATRON SYSTEM. WE HAVE PLEASURE IN SUBMITTING THE FOLLOWING<=
ESTIMATES.<== ==

PART NR.	AVAILABILITY	PRICE	DELIVERY<== ==
263-4719	61	273.70	6 weeks<==
263-4720	12	118.86	2 weeks<==
1973A26	2	1316.00	1 month<==
7168/A6	N/A<==		
7168/A7	22	16.70	in stock<== ==

PLEASE NOTE ALL PRICES ARE US DOLLARS CIF. WE LOOK FORWARD TO<=
RECEIVING YOUR ORDERS.<== ==

Hiriam P Thurston<=
Akron Associates<=
3) <=
3167 Main Street<=
Akron Ohio 12345<=
United States of America<== == == == == == == ==

NNNN

2) Indicates the IA5 control character No. 9 (FE1; horizontal tab) which could be used to mark the start of text.

3) The IA5 control elements No. 11 (FE3; vertical tab) can be used to mark the end of signature and the start of the sender's address (if any).

Both format effectors enable Administrations, by bilateral agreement, to reformat the message to their own output requirements.

A.3 *Standard teletmessage in IA5 without service indication or control characters for reformatting*

<=
ZCZC ZYX3174 DGR118 2-3170698 <=
GBXX CT UDNX 084 <=
TDMT AKRON OHIO 84 3 1605 <= ==

MR P C JENKINSON <=
216 GREAT BADDOW STREET <=
WHITTON <=
TWICKENHAM <=
MIDDLESEX TW7 9RY <= ==

WE REFER TO YOUR REQUEST FOR REPLACEMENT PARTS WITH COST FOR YOUR <=
DIATRON SYSTEM. WE HAVE PLEASURE IN SUBMITTING THE FOLLOWING <=
ESTIMATES. <= ==

PART NR.	AVAILABILITY	PRICE	DELIVERY <= ==
263-4719	61	273.70	6 weeks <=
263-4720	12	118.86	2 weeks <=
1973A26	2	1316.00	1 month <=
7168/A6	N/A <=		
7168/A7	22	16.70	in stock <= ==

PLEASE NOTE ALL PRICES ARE US DOLLARS CIF. WE LOOK FORWARD TO <=
RECEIVING YOUR ORDERS. <= ==

Hiriam P Thurston <=
Akron Associates <=
3167 Main Street <=
Akron Ohio 12345 <=
United States of America <=
4.05 EST 3 JULY 1986 <= == == == == == == ==

NNNN

A.4 *Standard teletmessage without service indication or sender's address in ITA2*

<=
ZCZC LYX2314 DDN2716 1234FILT <=
GBXX CT FRXX 026 <=
PARIS 26 3 1729 <= ==

MARIA C COSTELLO <=
216A PERCY ROAD <=
FILTON <=
BRISTOL <=
AVON BS6 7PL <= ==

ON THIS YOUR DAY I WISH TO SEND YOU AND YOUR HUSBAND MY SINCERE BEST <=
WISHES FOR A HAPPY LIFE TOGETHER. <= ==

CLAUDE MALEVAL <=
1729/3ER JUILLET 1986 <= == == == == == == ==

NNNN

A.5 *Standard teletmessage with Greetings/Deluxe service indication and without sender's address and date and time of acceptance in IA5 but with control characters for reformatting*

<=
ZCZC LYX2314 DDN2716 1234LOND <=
GBXX CT FRXX 023 <=
PARIS 23 3 1729 <= ==

TELEMESSAGE 11 <=
MARIA C COSTELLO <=
216A PERCY ROAD <=
FILTON <=
BRISTOL <=
AVON BS6 7PL <= ==

4) ON THIS YOUR DAY I WISH TO SEND YOU AND YOUR HUSBAND MY SINCERE BEST <=
WISHES FOR A HAPPY LIFE TOGETHER. <= ==

Claude Maleval <=
4) <= == == == == == == ==

NNNN

4) Indicates an IA5 control character which could be used to mark the start and end of text and signature to permit Administrations by bilateral agreement to reformat the message to their own requirements.

**INTERWORKING BETWEEN THE TELEMESAGE SERVICE AND
THE INTERNATIONAL PUBLIC TELEGRAM SERVICE**

1 Introduction

This Recommendation defines the procedure to be followed for interworking between the Telemesage service and the international public telegram service.

2 Basic requirements

In case of interworking, the international public Telemesage service shall provide the capability of operating in conjunction with the international public telegram service in order to realize a minimum service between Administrations.

3 General operating principles

3.1 In cases of interworking between the Telemesage services and the international public telegram service, the operational procedures should be, in principle, in accordance with the mode of service, applied by the concerned Administration.

3.2 The operational procedures for the international public telegram service are defined in Recommendations F.1 and F.31.

3.2.1 Provision shall be made in interworking between the international telegram service and the Telemesage service to ensure that obligatory class of telegrams are provided for. This does not preclude any special national arrangements which might be necessary.

3.3 The international Telemesage service is defined in Recommendation F.50.

3.4 The charging and accounting principles for interworking between the Telemesage service and the international telegram service will be defined in the D-Series Recommendations.

4 Special provisions for interworking

4.1 *International network requirements*

Administrations that have not introduced the Telemesage service transmit their telegrams over the circuits that have been used up to the introduction of the Telemesage service at the Administration concerned, if no other agreement exists.

4.2 *Delivery address*

In the direction telegram service to Telemesage service, the first line of the address shall be preceded by the service indication **TELEMESAGE**.

4.3 *Archives*

In the direction telegram service to Telemesage service, the specific provisions should take Quality of Service aspects into consideration. (For further study.)

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

SECTION 6

TELEX

Recommendation F.60

OPERATIONAL PROVISIONS FOR THE INTERNATIONAL TELEX SERVICE

1 Introduction

1.1 Scope

1.1.1 These provisions fix the rules to be followed in the international telex service. Telex is a telegraph service for subscribers whereby they can communicate directly and temporarily between themselves using start-stop telegraph equipment operating at 50 bauds and with International Telegraph Alphabet No. 2.

1.1.2 Questions of an essentially technical nature concerning the telex service are dealt with by other CCITT Recommendations.

1.2 Definitions

1.2.1 The following terms used in these provisions have the undermentioned definitions:

emergency routes

F: voies de secours

S: rutas de emergencia

The circuit(s) to be used in case of complete interruption or major breakdown of the primary and secondary routes. The emergency routes may pass through any country.

Government telex calls

F: communications télex d'Etat

S: comunicaciones télex de Estado

Those telex calls originating with one of the authorities which enjoy the advantages of Government telegrams and telephone calls, in accordance with the *International Telecommunication Convention* [1].

international telex position

F: position télex internationale

S: posición télex internacional

Manual position in an international telex centre for establishing telex calls between two countries.

ordinary private telex calls

F: communications télex privées ordinaires

S: comunicaciones télex privadas ordinarias

All telex calls other than:

- i) service telex calls, including requests for information and franking privilege telex calls;
- ii) safety of life telex calls;
- iii) government telex calls.

primary routes

F: voies primaires

S: rutas primarias

The circuits normally used in a given relation.

safety of life telex calls

F: communications télex relatives à la sécurité de la vie humaine

S: comunicaciones télex relativas a la seguridad de la vida humana

Those telex calls requested in accordance with Article 25 of the *International Telecommunication Convention* [1].

secondary routes

F: voies secondaires

S: rutas secundarias

The circuits to be used when the primary routes are congested. The secondary route(s) may pass through the same countries as the primary routes or through different countries. In manual and semi-automatic operation, secondary routes may also be used when the transmission on the primary route is not sufficiently good, or if traffic is to be handled outside the normal hours of service on the primary routes.

service telex calls

F: communications télex de service

S: comunicaciones télex de servicio

Those telex calls that relate to the working of the international telecommunication services.

(telex) relation

F: relation (télex)

S: relación (télex)

A (telex) relation between two terminal countries exists when there is between them an exchange of telex traffic (and, normally, a settlement of accounts).

1.3 International telex circuits — Routes

1.3.1 International telex circuits are made up by using telegraph-type circuits.

1.3.2 The networks of the countries operating the telex service shall, as far as possible, be directly connected.

1.3.3 In case of breakdown, any defective international circuit (or section of an international circuit) must be repaired with all possible speed and, pending repair, every attempt must be made to provide a replacement circuit with the minimum delay.

1.3.4 For each relation, the Administrations concerned shall, by mutual agreement, decide upon one or more primary telex routes and, to the extent necessary and possible, upon secondary telex routes.

1.3.5 In this respect, the Administrations shall conform, as far as possible, with the principles recommended by the CCITT as regards the constitution and maintenance of circuits and installations.

1.3.6 A *Table of International Telex Relations and Traffic* [2] is published in accordance with Recommendation F.95.

1.4 *Duration of service – Legal time*

- 1.4.1 Each Administration shall fix the working hours of its centres.
- 1.4.2 Automatic international telex centres are in principle continuously open.
- 1.4.3 Manual international telex centres should, as far as possible, afford continuous service.
- 1.4.4 Switching centres that are not open continuously are required to extend their service beyond the normal closing hours when there are calls in progress.
- 1.4.5 Each centre shall use the legal time of its country or of its zone.

2 **Classes of telex call**

2.1 *General*

- 2.1.1 Accepted classes of telex call are:
 - a) ordinary private telex calls;
 - b) service telex calls, including requests for directory information between telex centres and franking privilege telex calls.
- 2.1.2 In the manual and semi-automatic services only, the following additional classes of call are accepted:
 - a) safety of life telex calls;
 - b) Government telex calls.

2.2 *Service telex calls*

- 2.2.1 Service telex calls (as defined in § 1.2.2) may be exchanged free of charge between the Administrations concerned with the international telex service.
- 2.2.2 However, by agreement between the Administrations concerned, the telephone service may use, free of charge, the telex service provided by these Administrations for the exchange of telex calls concerning the working of the international telephone service (including the establishment and maintenance of circuits for other telecommunications carried out through the international telephone service), which calls shall then be regarded as service telex calls.
- 2.2.3 By way of reciprocity, the agreements mentioned in § 2.2.2 above are expected to provide that in the same relations the telex service may use, free of charge, the telephone service conducted by the Administrations for the exchange of telephone calls relating to the working of the international telex service. These telephone calls shall then be regarded as service telephone calls.
- 2.2.4 Service telex calls may be requested only by persons authorized to do so by their respective Administrations.
- 2.2.5 Service telex calls relating to the official business of the ITU may be exchanged free of charge between Administrations and recognized operating agencies on the one hand and the Chairman of the Administrative Council of the ITU, the Secretary-General of the ITU, the Director of the CCITT, the Director of the CCIR and the Chairman of the IFRB on the other hand.
- 2.2.6 In accordance with Recommendation D.193, privilege telex calls may be offered during the conferences and meetings of the ITU. Such privilege telex calls are considered as service telex calls and are admitted on a reciprocal and optional basis.
- 2.2.7 Service telex calls should be made, as far as possible, outside the busiest hours.

2.3 *Government telex calls (manual and semi-automatic service only)*

- 2.3.1 The person booking a Government telex call must state his name and rank on request.
- 2.3.2 A Government telex call shall have priority only if priority has been specifically requested by the calling subscriber.

3 Operation of the telex service

3.1 *Operating systems*

3.1.1 The telex service is operated:

- automatically;
- semi-automatically; or
- manually.

3.1.2 Administrations shall reach mutual agreement upon the most appropriate method of operation to be applied in the international relations that concern them.

3.2 *Automatic operation*

3.2.1 It is strongly recommended that the telex network of each country be on an automatic switching basis and that it be possible for subscribers to reach one another by fully automatic selection.

3.2.2 To establish an international call in the automatic service the subscriber shall normally select:

- a) the access code to the international network, which is fixed according to national rules,
- b) the telex destination code, which as far as possible should correspond to the list given in Recommendation F.69, and
- c) the call-number of the distant subscriber.

3.2.3 In accordance with Recommendation U.1, through-connection is normally indicated to the calling subscriber by the return of the called subscriber's answerback code. In order to facilitate the checking of this code within the delay provided by Recommendations F.61 and U.1, insertion by the network of any signals between the call-connected signal and the called subscriber's answerback should be avoided.

Note – For future systems on international connections, it is also desirable to avoid the addition by the called network of date, time and other signals after the called subscriber's answerback. However, where necessary, service codes or other information in accordance with CCITT Recommendations (e.g. Recommendation U.42) will be sent by the called network.

3.2.4 In the automatic service no priority shall be given to the various classes of calls.

3.2.5 The duration of calls in the automatic service should not be limited.

3.2.6 For any given traffic relation between two countries, the number of circuits provided should be arranged such that, during the busy hour, the probability of lost calls due to the lack of international circuits should not exceed one call in 50. For the calculation of the number of circuits, the requirements of CCITT Recommendation F.64 should apply.

3.3 *Semi-automatic and manual operation*

3.3.1 *General provisions*

3.3.1.1 Wherever fully automatic selection has not yet been adopted, it is recommended that semi-automatic operation should be introduced, whereby the operator of the originating international telex position receives the booking, sets up and controls the call.

3.3.1.2 Where semi-automatic service is not possible, calls shall be established manually by means of two or more international telex positions in tandem whereby the operator of the originating international telex position normally receives the booking.

3.3.1.3 The operator of the originating international position must be acquainted with the necessary operating particulars of the networks in the destination country. The incoming Administration will give all the necessary technical information to the outgoing Administration.

3.3.1.4 Any faults in installations noted by international telex positions must be reported without delay to the technical service responsible for their maintenance.

3.3.1.5 The technical services responsible for the maintenance of telex circuits are recommended to use the abbreviations given in the *List of service abbreviations for maintenance of telegraph circuits*, annexed to Recommendation R.90.

3.3.1.6 The number of circuits between two networks and the switching equipment should in all cases be calculated as far as possible for a no-delay telex service.

3.3.2 *Booking of telex calls*

3.3.2.1 In the booking of a call, the telex installation of the subscriber required must be designated by the name of the country, the subscriber's exchange if necessary, and his call-number.

3.3.2.2 Bookings of telex calls not completed shall cease to be valid:

Where all the offices concerned are open continuously:

- a) at midnight if the telex call has been booked before 10 p.m. on the same day;
- b) at 8 a.m. if the telex call has been booked after 10 p.m. the previous evening;
- c) in each case the times indicated shall be those of the originating telex centre.

Where all the offices concerned are not open continuously:

at the telex service closing time at the end of the day.

3.3.2.3 In the case of all bookings of telex calls, and subject to the provisions relative to the validity of bookings, the caller may, so long as the required subscriber has not been obtained:

- a) cancel his booking;
- b) specify the time after which the booking should be cancelled;
- c) change the number of the station required within the destination country.

3.3.2.4 Modifications of bookings shall be permitted free of charge; the origin Administration may, however, make a special charge covering the additional work of recording. This charge shall not enter into the international accounts.

3.3.3 *Priority of telex calls*

3.3.3.1 When the manual telex service normally provides a demand service; no priority shall be given to the various classes of call.

3.3.3.2 Under fault or congestion conditions, and in general when the telex service does not provide a demand service, either normally or temporarily, international telex calls shall be set up in the following order:

- a) calls concerning safety of life;
- b) service calls concerning the re-establishment of international telecommunication links that have been totally interrupted;
- c) Government calls for which priority has specifically been requested;
- d) Government calls for which priority has not been requested, ordinary private calls, service calls other than those mentioned in b).

3.3.3.3 In the international telex centre, calls shall take their priority according to their class and time of receipt at the exchange.

3.3.4 *Establishment and disconnection of calls by the international telex positions*

3.3.4.1 Telex calls established manually or semi-automatically will normally be controlled by the international telex position in the origin country. However, where a call is established over two or more international links and access to the second link is obtained manually in the transit country concerned, control of the call will be exercised by the operator in the transit country in the following circumstances:

- a) if the first link is provided by landline, satellite, microwave link or submarine cable and the second or subsequent link by ARQ radio;
- b) if the call is booked with the operator in the transit country and connection with the subscriber in the origin country is established semi-automatically.

3.3.4.2 International telex centres connected with each other by several international telex circuits may, by mutual agreement, allocate certain of these circuits for setting up transit calls or for the establishment of traffic in one direction only.

3.3.4.3 For the operation of international telex circuits, the French or English language shall be used between Administrations having different languages, in the absence of special agreements between them for the use of other languages.

3.3.4.4 In the manual service, all bookings, modifications of bookings and cancellation advices shall be transmitted as quickly as possible to the international telex centre charged with establishing the calls booked.

3.3.4.5 In the manual service, calling signals on international circuits must be answered immediately.

3.3.4.6 On bothway circuits, calls of the same class are established alternately. The international telex centres may, by mutual arrangement, temporarily change to one-way working to improve the flow of traffic.

3.3.4.7 Telex calls already prepared must not be delayed for the benefit of calls of higher priority, with the exception of calls concerning safety of life.

3.3.4.8 Without prejudice to the provisions of § 3.3.6, the operator directing the calls at the international telex position shall verify that transmission between the correspondents is satisfactory. He shall note the time when the call is established as well as the time when the call ends and/or its duration. He shall record service incidents and other items necessary for the preparation of the international accounts.

3.3.4.9 With the exception of the cases where the duration of calls is limited, and of cases where an infringement of the present provisions or national instructions has been noted, operators are forbidden to cut off or break into an established call that is proceeding normally.

3.3.5 *Limitation of the duration of telex calls*

3.3.5.1 In general, the duration of ordinary private calls and service calls shall not be limited. However, under congestion conditions, the international telex centres concerned may agree to limit the duration of such calls to twelve, or even six minutes.

3.3.5.2 The duration of safety of life and Government calls shall not be limited. These calls are only available in the manual and semi-automatic service.

3.3.5.3 However, transit Administrations shall have the right, in the case of breakdown, to limit the duration of Government calls to twelve minutes when these calls are established through the intermediary of one of their exchanges. In such a case the operator in the transit country shall advise the controlling operator that restrictions on duration are in force.

3.3.5.4 If the duration of an operator-assisted call is limited, the caller shall be informed, when the call is about to be connected, that it will be cut off after the due time.

3.3.6 *Operating procedure on international telex positions*

3.3.6.1 *Single operator case*

3.3.6.1.1 If the called subscriber can be obtained directly by the controlling international telex operator, this operator:

- a) holds the calling subscriber and selects a free circuit;
- b) selects the called subscriber;
- c) sets up the call to the called subscriber and obtains the called subscriber's answerback, which must also be received by the calling subscriber;
- d) obtains the calling subscriber's answerback, which must also be received by the called subscriber;
- e) operates the timing equipment;
- f) clears down the connection on reception of the clearing signal.

3.3.6.1.2 If the called subscriber is engaged, the controlling international telex operator signals **OCC** and then releases the calling subscriber. When the calling subscriber has to be recalled the signal **RAP** is sent after the **OCC** signal before releasing.

3.3.6.2 *Two-operator case*

3.3.6.2.1 If the called subscriber is obtained via two international telex positions:

- a) the controlling international operator holds the calling subscriber and selects a free circuit;
- b) the operator at the second international position announces himself by the abbreviated name of his telex exchange¹⁾;
- c) the controlling international operator sends his own answerback code and signals the particulars of the called subscriber;
- d) the operator of the second international position:
 - i) holds the circuit from the controlling international position,
 - ii) selects the called subscriber,
 - iii) signals the letters **DF** to the controlling international position,
 - iv) establishes the connection between it and the called subscriber;
- e) the controlling international operator:
 - i) establishes the connection with the calling subscriber and obtains the called subscriber's answerback which must, at the same time, be received by the calling subscriber,
 - ii) obtains the calling subscriber's answerback, which must also be received by the called subscriber,
 - iii) operates the timing equipment,
 - iv) clears down the connection on receiving the clearing signal.

3.3.6.2.2 If the called subscriber is engaged, the operator of the second international position signals **OCC** and clears down the international circuit.

3.3.6.3 *Multiple operator case*

3.3.6.3.1 If the called subscriber is obtained via more than two international telex positions:

- a) the controlling international operator holds the calling subscriber and selects a free circuit;
- b) the operator at the second international position announces himself by his abbreviated name;
- c) the controlling international operator sends his own answerback and signals the particulars of the called subscriber;
- d) the operator at the second international position extends the call to the third international position and signals **THRU** to the calling international position;
- e) the operator of the third international position announces himself by his abbreviated name;
- f) the controlling international operator sends his own answerback and signals the particulars of the called subscriber;
- g) the operator of the third international position:
 - i) holds the circuit from the controlling international position,
 - ii) selects the called subscriber,
 - iii) signals the letters **DF** to the controlling international position,
 - iv) establishes the connection between it and the called subscriber;
- h) the controlling international operator:
 - i) establishes the connection with the calling subscriber and obtains the called subscriber's answerback, which must also be received by the calling subscriber,
 - ii) obtains the calling subscriber's answerback, which must also be received by the called subscriber,
 - iii) operates the timing equipment,
 - iv) clears down the connection on receiving the clearing signal.

¹⁾ It is recommended that, as far as possible, the abbreviated name of the telex exchange shall be transmitted by means of the answerback unit and shall be so constituted as to permit the identification of the operator's position concerned in the connection of an international call.

3.3.6.3.2 If the operator of the second international telex position finds all the circuits to the third position engaged, he should signal **NC** and clear down the international circuit.

3.3.6.3.3 If the called subscriber is engaged, the international operator of the destination exchange signals **OCC** and clears down the international circuit.

3.3.6.4 *Subscriber recall*

3.3.6.4.1 When a telex connection has to be established by recalling the calling subscriber (§ 3.3.6.1.2 above) the operator of the position controlling the call will first select from the two correspondents the one he can reach more easily. The procedure will be analogous to that described in §§ 3.3.6.1, 3.3.6.2 and 3.3.6.3 above, but before connecting the two subscribers the controlling operator will transmit **DF** to the calling subscriber to advise him that he is receiving a call that he has previously booked.

3.3.6.4.2 The operator may not occupy international telex circuits while awaiting clearance of a busy subscriber line.

3.3.6.5 *Operator recall*

3.3.6.5.1 It is not possible to recall the operator of a telex position to a connection already set up, except when applying Recommendation U.21 by agreement between Administrations. The operator-recall signal shall be acted upon by the controlling operator only. In the event of the assistance of any other operator being required, it will be obtained by the controlling operator.

3.3.6.6 *Instructions for foreign subscribers*

3.3.6.6.1 All instructions necessary for the efficient handling of a subscriber's international telex traffic may be given to that subscriber only through the medium of the international terminal exchange to which he is connected.

3.4 *Characteristics of subscribers' equipment*

3.4.1 *Network interface*

3.4.1.1 The signals sent by the start-stop equipment used in the telex service are those of International Telegraph Alphabet No. 2 as shown in Recommendation S.1.

3.4.1.2 Where the subscriber's equipment is automatic, e.g. where a computer port simulates the functions of a teleprinter, the provisions of Recommendation U.40 shall be observed, particularly concerning the number and timing of call attempts into the telex network.

3.4.2 *Terminal availability*

3.4.2.1 In the telex service all terminals, like exchanges, shall provide continuous service. The terminal equipment of a free telex line shall accordingly be available at all times to answer a call and record a message from the calling subscriber whether or not an operator is present at the called terminal.

3.4.2.2 The subscriber's equipment must be arranged in such a way that a call can be received, the answer-back taken, the message transmitted and the connection cleared without the intervention of the called subscriber.

Failure to abide by this condition must be indicated by the return of the call connected signal in response to a valid call signal and results in the sequence **DER** being transmitted to the caller, unless the called terminal has requested temporary interruption of its service by reporting absent in which case that sequence must be replaced by **ABS**.

3.4.2.3 In exceptional cases, Administrations may allow subscribers to dispense with the stipulation of § 3.4.2.2 for periods previously notified. In such cases means must be provided for the transmission of one of the appropriate code expressions either automatically or, in the case of a manual exchange, by the incoming switchboard operator.

3.4.2.4 While a call is established, the subscriber's equipment must be continuously ready to receive signals. Where applicable, the teleprinter motor must rotate continuously for the duration of an established connection.

3.4.2.5 The subscriber's equipment should return its answer-back promptly in response to a **WRU** signal at any stage while the call is established. Nevertheless, following the initial exchange of answerbacks and in accordance with the S-Series Recommendations, a special sequence may be used to inhibit the answerback mechanisms where transfer to another alphabet is desired after call establishment.

3.4.3 *Answerback composition*

3.4.3.1 The answerback code should include:

- a) the subscriber's number;
- b) if required, the machine identity letter or letters;
- c) optionally, an (abbreviated) name designating the subscriber;
- d) the telex network identification code, preceded by a space.

3.4.3.2 Preferably the various parts of the answerback code should be arranged in the order shown in § 3.4.3.1. Nevertheless, if Administrations alter on a network basis the form of existing answerback codes or open new networks they must ensure that the answerback code is composed in the form shown above.

3.4.3.3 Where a telex subscriber has more than one telex line and automatic hunting facilities are provided, the answerback code of each machine of the group should, apart from the machine identification letter(s), be identical.

3.4.3.4 If the order shown in § 3.4.3.1 is applied, the series of 20 signals in the answerback code, as shown in Recommendations S.6, should be as follows:

- a) for machines without identification letters:
 - figure-shift or (if permanently fitted or required by the network) letter-shift;
 - carriage-return;
 - line-feed;
 - the national call number of the subscriber or (if letter-shift is fitted in the first position) figure-shift followed by the national call number of the subscriber;
 - letter-shift;
 - space;
 - letters indicating as explicitly as possible the name of the telex subscriber;
 - space;
 - the one or two letters of the telex network identification code (code listed in column 5 of the *List of Indicators for the Telegram Retransmission System and Telex Network Identification Codes – Part A* [4]);
 - letter-shift (if permanently fitted or required by the network);
- b) for machines with identification letters:
 - figure-shift or (if permanently fitted or required by the network) letter-shift;
 - carriage return;
 - line-feed;
 - the national call number of the subscriber, or (if letter-shift is fitted in the first position) figure-shift followed by the national call number of the subscriber;
 - letter-shift;
 - machine identification letter(s);
 - space;
 - letters indicating as explicitly as possible the name of the telex subscriber;
 - space;
 - the one or two letters of the telex network identification code;
 - letter-shift (if permanently fitted or required by the network);

- c) for machines without identification letters and whose answerback code does not include letters indicating the (abbreviated) name of the subscriber:
 - figure-shift or (if permanently fitted or required by the network) letter-shift;
 - carriage return;
 - line-feed;
 - the national call number of the subscriber or (if letter-shift is fitted in the first position) figure-shift followed by the national call number of the subscriber;
 - letter-shift;
 - space;
 - the one or two letters of the telex network identification code;
 - carriage-return;
 - line-feed;
 - letter-shift (if permanently fitted or required by the network);
- d) for machines with identification letters, but whose answerback codes does not include letters indicating the (abbreviated) name of the subscriber:
 - figure-shift or (if permanently fitted or required by the network) letter-shift;
 - carriage-return;
 - line-feed;
 - the national call number of the subscriber or (if letter-shift is fitted in the first position) figure-shift followed by the national call number of the subscriber;
 - letter-shift;
 - machine identification letter(s);
 - space;
 - the one or two letters of the telex network identification code;
 - carriage-return;
 - line-feed;
 - letter-shift (if permanently fitted or required by the network).

3.4.3.5 Should the signals in the answerback code not fill the places available, the unused places should be filled by the necessary number of letter-shifts, which should preferably be inserted before the telex network identification code.

3.4.3.6 For the particular case of answerback codes generated by teleprinters (or equivalent terminal devices) on ships, see Recommendation F.130.

3.5 *Restriction on the use of a telex station*

3.5.1 Administrations reserve the right to suspend the telex service in the cases mentioned in Articles 19 and 20 of the Convention [1].

3.5.2 Administrations and recognized private operating agencies shall refuse to make the telex service available to a telegraph forwarding agency that is known to be organized for the purpose of sending or receiving telegrams for retransmission by telegraphy with a view to evading the full charges due for the complete route.

3.5.3 Administrations shall refuse to provide international telex service to a customer whose activity would be regarded as an infringement of the functions of an Administration in providing a public telecommunication service.

3.6 *Subscribers' operating procedure for telex calls*

3.6.1 Administrations may wish to advise their customers on how to make best use of the international telex service. To that end, an example for such provisions is given in Annex A. Such instructions may also include information regarding the code expressions used in the international telex service, which are listed in § 4.1.

3.7 Directories

3.7.1 Compilation of directories

3.7.1.1 As far as possible each Administration shall publish a directory of its subscribers at least once a year.

3.7.1.2 Directories should not be larger than 210 × 297 mm (A4).

3.7.1.3 The directory shall be composed of two separate lists, a list of subscribers and a list of answerback codes.

3.7.1.3.1 The list of subscribers shall be drawn up as follows:

- either a) places where stations are located, classified in alphabetical order, and
within that classification, subscribers' names arranged in alphabetical order;

Example:

Place	Subscriber's name and address	Subscriber's exchange (where necessary)	Call number	Answer-back code
-------	-------------------------------	--	----------------	---------------------

- or b) subscriber's names only, arranged in alphabetical order (subscribers of the same name being classified in the alphabetical order of the place in which they are located).

Example:

Subscriber's name and address, including the locality	Subscriber's exchange (where necessary)	Call number	Answer-back code
--	--	-------------	---------------------

3.7.1.3.2 The list of answerback codes shall be compiled in numerical order.

Example:

Answer-back code	Subscriber's name and place	Subscriber's exchange (where necessary)	Call number (where necessary)
---------------------	-----------------------------	--	----------------------------------

3.7.1.3.3 However, in cases where the answerback codes are not yet arranged in the order laid down in § 3.4.2.1, the list of answerback codes may be compiled in alphabetical order.

3.7.1.4 The directories sent to Administrations shall be set up in Roman letters. The call-number published shall be that which the calling subscriber has to transmit in order to obtain the called subscriber after he has followed the procedure prescribed in his own country to gain access to an international circuit.

3.7.1.5 When directories are written in a language other than the language used in that country, they shall be accompanied by an explanatory note to facilitate the use of such directories. This note shall be drawn up in whatever official language of the Union has been agreed upon by the Administrations concerned.

3.7.1.6 Each directory should also contain:

- a) the list of destination codes for the countries to which the national subscribers have access. These codes shall be supplemented by the access prefix for the international telex network;
- b) a list of the telex network identification codes of these countries.

3.7.1.7 The telex network identification code of the country (or network) should be shown in large type on the cover and on the spine (i.e. the bound edge) of each directory.

3.7.1.8 To facilitate reference in international telex centres to a number of directories issued by various Administrations, the orientation of the printing on the spine should be similar to that used in this fascicle (II.4). When directories are stored vertically on a bookshelf, identification codes should all be horizontal (like E for English) and other particulars, which cannot conveniently be printed horizontally, should all read from bottom to top (like *RECOMMENDATIONS* ...).

3.7.2 *Supply of directories*

3.7.2.1 Each Administration shall supply, free of charge, to the Administrations with which a telex service exists, a sufficient number of copies of its subscribers' directories for official use. The number of such copies shall be fixed in advance by mutual agreement and shall be regarded as applying until a request to change it is received. Such request must be made not later than 1 February each year.

3.7.2.2 Each Administration shall supply, against payment, to the Administrations and recognized private operating agencies with which a telex service exists, a number of its subscribers' directories to be put on sale. The number of copies intended for sale shall be fixed in advance by mutual agreement and shall be regarded as applying until a request to change it is received. Such requests must be made not later than 1 February each year.

3.7.2.3 A subscriber wishing to obtain a copy of the telex directory of another country must apply to his own Administration. If an application for its directory is received direct by an Administration from a subscriber in a foreign country, the request shall be forwarded by that Administration to the Administration of the subscriber's country.

3.7.2.4 An Administration that has supplied directories of its country intended for sale to another Administration shall indicate the equivalent in Special Drawing Rights or gold francs of the sale price of the directories applied in the country of origin plus any postal charges.

4 **Miscellaneous provisions**

4.1 *Code expressions used in the international telex service*

4.1.1 In service correspondence the following code expressions should be used:

ABS	Absent subscriber/office closed
ADD	Please input your international telex number
ANUL	Delete
BCT	Broadcast call
BK	I cut off
BMC	No end of message or end of transmission received, therefore message cancelled
CFM	Please confirm/I confirm
CI²⁾	Conversation impossible
COL	Collation please/I collate
CRV	Do you receive well?/I receive well
DER	Out of order (see Table 1/F.60)

²⁾ This code expression is intended to be generated only by automatic means and not normally used in service correspondence between operators.

DF	You are in communication with the called subscriber
EXM	Connection cleared due to exhaustion of text recording medium at either the called or calling terminal
FMT	Format error
GA	You may transmit/May I transmit?
IAB	Invalid answerback from destination
IMA	Input message acknowledgement
INF	Subscriber temporarily unobtainable, call the information service
ITD	Input transaction accepted for delivery
ITL	I transmit later
JFE	Office closed because of holiday
LDE	Maximum acceptable message length or duration has been exceeded
MNS	Minutes
MOM	Wait/waiting
MUT	Mutilated
NA	Correspondence with this subscriber is not admitted
NC	No circuits
NCH	Subscriber's number has been changed
NDN	Non-delivery notification
NI	No line identification available
NP	The called party is not, or is no longer, a subscriber
NR	Indicate your call number/My call number is ...
OCC	Subscriber is engaged
OK	Agreed/Do you agree?
PPR	Paper
R	Received
RAP	I shall call you back
RDI	Redirected call
REF	Reference of the message delivered to the telex side from a conversion facility for telex/teletex interworking
RPT	Repeat/I repeat
RSBA	Retransmission still being attempted
SSSS	Change of alphabet
SVP	Please
T³⁾ (or figure 5) ³⁾	Stop your transmission
TAX	What is the charge?/The charge is ...
TEST MSG	Please send a test message
THRU	You are in communication with a telex position
TMA	Maximum number of addresses exceeded
TPR	Teleprinter
TTX	Designation of the conversion facility (CF) for telex-teletex interworking
VAL	Validation response
W	Words
WRU	Who is there?
XXXXX	Error

³⁾ To be repeated until the transmission is brought to a stop.

TABLE 1/F.60

Expanded form of DER code expression

Code expression	Additional information characters ^{a)} , ^{b)}	Meaning
DER	EXM NAB PFL	Out of order due to no text recording medium Out of order due to failure of answerback mechanism Out of order due to no power at the called terminal

^{a)} Or technical failure presenting the same condition at the exchange.

^{b)} These characters may appear anywhere on the line preceding the **DER** signal and are an integral part of the expanded service signal.

Note 1 – The implementation of these expanded forms of the service signal is a national matter.

Note 2 – See also Recommendation U.45.

4.1.2 Code expressions received when interworking with users of the IPM service are given in Recommendation F.421(F.75).

4.2 *Printing of telex numbers*

4.2.1 Standardized printing of telex numbers on letterheads is especially valuable for international purposes. It is recommended that this printing contain the word *Telex*, followed by the subscriber's answerback code, for example:

Telex 31005 SHELL NL

4.2.2 In those cases where there is no number in the answerback code the word *Telex* should be followed by the telex number and the complete answerback within inverted commas, for example:

Telex 24935 "LAPORTCHEM LDN"

ANNEX A

(to Recommendation F.60)

Operating procedure for telex calls

A.1 *Setting up a telex call*

A.1.1 In the automatic service the subscriber selects the telex number required. The establishment of a connection is recognized by the reception of the answerback from the wanted subscriber. The caller checks whether the answerback he has received is in fact that of the appropriate subscriber. If it is not, he disconnects and reselects the number of the subscriber required. When the caller has received the correct answerback he releases his own answerback before starting the transmission of a message.

A.1.2 In the manual or semi-automatic service a connection is established through the intermediary of an international telex position. The establishment of a connection is indicated by the reception of the answerback from the called subscriber, followed by that of the calling subscriber. The subscribers must not intervene during this procedure. The caller checks whether the answerback he has received is in fact that of the wanted subscriber. If it is not, he should disconnect and inform the international telex position accordingly.

A.1.3 If the called telex station is continuously unattended, e.g. automatic answering equipment, store-and-forward equipment or other reception equipment, a dialogue with the called telex station is impossible.

A.1.4 If the telex machine of the called subscriber is attended, a dialogue between subscribers is possible, in which case the end of each transmission should be indicated by the plus sign and question mark (+ ?) followed by a letter-shift, thus inviting the other party to transmit in his turn.

A.2 *Setting out the message*

A.2.1 Where the recipient may be in doubt about the identity of the caller, it is recommended that the calling subscriber indicate:

- a) name and place of the sender, preceded by the word **FROM**;
- b) name and place of the addressee, preceded by the word **TO**;
- c) if required, name and place of information addressee(s), preceded by the word **COPY**.

Practice has shown that the observation of this recommendation will often save additional work for the recipient especially when messages have to be distributed for action.

A.2.2 After the exchange of answerbacks as set out in A.1 above and following the recommendation in § A.2.1, the calling subscriber can transmit his message, for which the following uniform procedure is recommended:

- a) start a new line and mention own reference, if any, and the date of dispatch;
- b) start a new line and indicate the priority of the message, if desirable, such as **URGENT**, **VERY URGENT**, etc.;
- c) start a new line and indicate the subject if appropriate and/or the name of the person or department for whose attention the message is intended;
- d) start a new line and mention any references, such as **REF YOUR TELEX 123 OF 15.7**, **REF YOUR LETTER 456 OF 25.7**, **REF OUR TELECON**, etc.;
- e) start a new line and transmit the text of the message;
- f) after having completed the message, start a new line and transmit a plus sign (+) indicating the end of the message;
- g) obtain the answerback of the called subscriber, check it in order to be sure that the connection is still in good order and generate own answerback;
- h) if there are more messages, they should be separated from each other by at least 8 line-feeds, after the exchange of the answerbacks as mentioned in g);
- i) after transmission of the last message and the exchange of the answerbacks send at least 8 line-feeds and give the clearing signal.

A.3 *Additional instructions*

A.3.1 When a group, or part of a group, is composed of a whole number and an ordinary fraction, the fraction should be separated from the number by means of a dash without space.

Example: for *one and three quarters*: **1-3/4**

A.3.2 In order to avoid misunderstanding, a whole number, a fractional number, or a fraction followed by a % or ‰ should be transmitted by joining them up to the % or ‰ sign by a dash, or transmitted in full as appropriate.

Examples: for 2% transmit **2-0/0** or **2 PER CENT**
for 4½‰, transmit **4-1/2-0/00** or **4-1/2 PER MILLE**

A.3.3 When important figures or words appear in the text it is desirable to repeat them immediately after the group followed by a space either in brackets or preceded by the word **REPEAT**.

Examples: **1500 (1500)**
1500 REPEAT 1500
NOT REPEAT NOT

A.3.4 To pass to the beginning of the next line, i.e. to start a new line, first press carriage-return and then line-feed.

A.3.5 An error is corrected in the following manner:

- a) In manual transmission, by the sequence **XXXXXX** (letter X repeated five times and followed by a space)⁴⁾ joined to the erroneous word.

Example: **PLEASE DISPATCH FITXXXXX FIVE PARCELS**

- b) In automatic transmission, when preparing perforated tape, by *backspacing* (if necessary by counting the number of characters to be erased, including spaces and shifts, and backspacing by that number) to the erroneous character and then operating the letter-shift key to erase all the characters up to and including the last punched character. Then start again with the character to be sent immediately after the last correctly punched character.
- c) If the procedure mentioned under b) for one reason or other cannot be followed, an error could be corrected as indicated under a).
- d) If an error is detected after the transmission of a message but before the exchange of the answerbacks it should be corrected by clearly indicating under the text of the message what change is required, e.g.:

CORRECT 4TH WORD 2ND LINE TO READ NOT REPEAT NOT

DELETE 4TH WORD 2ND LINE

INSERT THE WORD "WITH" BETWEEN THE 4TH AND 5TH WORD OF 2ND LINE

A.3.6 If, for some reason or other, a message has to be cancelled during transmission this should be clearly indicated on a new line by transmitting three times the word **ANUL**.

A.3.7 In preparing a perforated tape for automatic transmission, care should be taken that:

- a) the signal *Who are you?* (figure case D) does not appear on the tape, in order to prevent the text from being garbled by the returned answerback of the other party;
- b) the procedure mentioned in § A.3.4 above is followed;
- c) the tape is perforated to the end with a series of letter-shifts.

A.3.8 Since figure case signs or letters coupled with the letters **F**, **G** and **H** are not universally standardized, they must not be used in international communications, but should be transmitted in full, e.g. **DOLLARS**, **POUNDS STERLING**, etc.

A.4 *Ineffective call attempts when calling from a manual terminal*

A.4.1 If an attempt to set up a call is unsuccessful (for example if the wanted subscriber is engaged), the network will return a *service code* indicating the reason. It will also disconnect automatically.

⁴⁾ It is to be noted that the sequence **E E E** (space and letter E repeated three times followed by a space and repetition of the last correct word) is in use but is not preferred.

A.4.2 The commonly used service codes, their meaning and the appropriate action for the subscriber to take are given in Table A-1/F.60.

TABLE A-1/F.60

Procedure after ineffective call attempts when calling from a manual terminal

Service code	Meaning	What to do
OCC NC	The called subscriber is engaged No circuits (or equipment) are available at the moment	Wait for at least one minute, then call again
DER	Called subscriber's terminal is out of order, or temporarily out of service whilst paper, ribbon or tape is replaced	Check the number and try again after about 5 minutes. If DER persists, refer the problem to the Telex Enquiries Service
ABS NA NP NCH	Called susbcriber is absent. Office is closed Access to called service not admitted The called number is not, or is no longer, a working line Called susbcriber's number has been changed (NCH may be followed by the new number)	Check the number. If correct, try again. If the same service signal is returned refer the problem to the Telex Enquiries Service

Note — Recommendation U.40 describes the procedure after ineffective call attempts when calling from an automatic telex terminal.

References

[1] *International Telecommunication Convention*, Nairobi, 1982.

[2] *Table of international telex relations and traffic*, ITU, Geneva, (annual publication).

[3] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.

[4] *List of indicators for the telegram retransmission system and telex network identification codes (Part A)*, ITU, Geneva.

**OPERATIONAL PROVISIONS RELATING TO THE CHARGEABLE
DURATION OF A TELEX CALL¹⁾**

1 Fully automatic service

1.1 With fully automatic international telex operation, call durations are registered automatically. Administrations may not have tickets available for working out the distribution of charges on the basis of the chargeable duration of calls.

1.2 In accordance with the relevant Recommendations for signalling in the telex service, the call-connected signal should start the equipment for determining the chargeable duration of the call in the case of automatic switching between subscribers.

1.3 Some networks delay the start of charging in order to avoid charging ineffective calls when preceded by a *call-connected* signal.

1.4 Consequently, the start of charging for calling subscribers may differ considerably from one network to another. It has been possible to note differences of 15 seconds between these starts for different networks.

1.5 In accordance with Recommendation D.61, the chargeable duration of a call in the fully automatic international telex service should be calculated from a conventional start fixed at between 5 and 7 seconds after the start of the call-connected signal. The end of the chargeable duration should be fixed not later than 1 second after the start of the clearing signal. The conventional start of charging is valid for all calls whether charged:

- a) minute by minute, any fraction of a minute being counted as one minute; or
- b) or by shorter periods, either derived by periodic pulse metering of the type used in national automatic services or derived from an automatic recording of all details, which would normally include the identification of the calling and called subscribers, the time at which the call began, the called duration and/or the time at which the call terminated.

1.6 The degree of accuracy of the call-duration measuring equipment should be $\pm 2\%$ for a set of measurements covering an adequate number of calls which, in light traffic relations, may lead to acceptance of the fact that 2% accuracy should be obtained on the overall measurements for a year but not for each of the partial measurements made during that year (monthly measurements, for example, if the monthly interval is retained for the establishment of international accounts).

2 Semi-automatic and manual service

2.1 The chargeable duration of a telex call begins at the moment the connection is established between the calling and the called subscribers.

2.2 It ends at the moment when the clearing signal given by the calling or called subscriber is transmitted over the international circuit. To this end, the international telex position must be able to receive the clearing signal from both sides.

2.3 With manual or semi-automatic operation, the operator of the controlling international telex position shall determine the chargeable duration, unless other arrangements have been made by agreement between the Administrations concerned, taking into account, where necessary, any difficulties in transmission or any irregularities that he may observe.

2.4 When a telex call is controlled by an operator at a telex position in a transit country, the chargeable duration of the call shall be notified to the international telex exchange of origin within 24 hours, giving the following details:

- the locality and number of the calling subscriber;
- the locality and number of the called subscriber;
- the time at which the call began;
- its chargeable duration in minutes.

Example: **STOCKHOLM 1846 TO ATHENS 21460 AT 1546Z 3 RPT 3 MNS**

¹⁾ See also Recommendation D.61.

Recommendation F.62

DUPLEX OPERATION IN THE TELEX SERVICE

The CCITT,

considering

- (a) that the introduction of duplex operation in the international telex service may be of interest;
- (b) that there is justification for prescribing certain directives to be observed by the Administrations that desire to carry out trials of duplex operation in the international telex service;

unanimously declares

- (1) that the Administrations that decide to authorize duplex operation in the international service should make the requisite technical arrangements to maintain the answerback procedure recommended by the CCITT;
- (2) that the possibility of taking a local record should be maintained for telex installations equipped for duplex operation and, in particular that these installations should be equipped with two teleprinters when duplex working is not carried out systematically making use of an automatic transmitter;
- (3) that, in cases where duplex international telex communication is permitted, the tariffs for duplex calls should be on the same basis as for simplex calls;
- (4) that, however, Administrations may levy a surcharge on subscribers who can use duplex operation, based either on a flat rate or on each call;

Note – Duplex telex calls used *exclusively for data transmission* with the purpose of checking errors should not be considered as *duplex operations*.

- (5) that the Administrations operating a duplex telex service either internally or in the international system should advise the CCITT of the technical arrangements and operating methods adopted.

Recommendation F.63

ADDITIONAL FACILITIES IN THE INTERNATIONAL TELEX SERVICE

The CCITT,

considering

- (a) that the introduction of additional facilities in the international telex service is of interest and desirable;
- (b) the need to standardize facilities that may be provided by Administrations and that may be available on an international basis;

unanimously declares that

- (1) Administrations should give attention to the operational methods to be used in the establishment of calls in the international telex service as indicated in Recommendation F.60;
- (2) when implementing new-generation exchanges, Administrations should consider the provision in the international telex service of the additional facilities listed in Table 1/F.63.

TABLE 1/F.63

Additional facilities in the international telex service ^{a)}

Facility	Definition reference ^{b)}	Relevant Recommendations
<i>Calling facilities</i>		
Automatic calling	1.1	S.16, S.19
<i>Subscriber call information</i>		
Line identification by the network	2.2	
<i>Facilities offered in the case of unsuccessful attempts, delayed or redirected calls</i>		
Call redirection	3.5	
Changed address interception	3.6	U.41
<i>Access to other networks or special services</i>		
Interworking between networks ^{c)}	4.1	F.71
Private network	4.2	
Store-and-forward	4.10	F.72
Delayed delivery	4.12, 4.13	
<i>Categories of special or privileged users</i>		
Access barred	5.4	
Public booths	5.13	
<i>Facilities for setting up multi-address calls</i>		
Broadcast call	6.2	
Conference call	6.3	

^{a)} A non-restrictive interpretation should be made of Table 1/F.63, such that these facilities not included in the table are not thereby excluded from the international telex service – the decisions to be taken on this matter depending on a further study of each specific facility.

^{b)} References are to Study Group IX's list of definitions, for which see Annex 2 to Question 21/IX [1].

^{c)} The intent in including this facility is to cover the interconnection with the telex service of private networks, etc. Interconnection with Teletex and Videotex is for further study.

References

- [1] CCITT – Question 21/IX, Annex 2, Contribution COM IX-No. 1, Study Period 1981-1984, Geneva, 1981.

**DETERMINATION OF THE NUMBER OF INTERNATIONAL TELEX CIRCUITS
REQUIRED TO CARRY A GIVEN VOLUME OF TRAFFIC**

The CCITT,

considering

(a) that it is essential to provide an adequate number of circuits between two telex networks in order to provide the rapid service stipulated in Recommendation F.60;

(b) that the use of tables for the determination of the number of circuits as a function of the traffic to be dealt with during the busy hour is an established practice in all Administrations, and is a convenient means of indicating a standard;

(c) that international telex circuits may be selected either at manual positions, or via automatic switching equipment, particularly where subscriber-to-subscriber selection is employed between two networks;

unanimously declares

(1) that Administrations should use Tables 1/F.64 or 2/F.64 below, according to the system of selection employed (i.e. manual selection or automatic selection) in the international service;

(2) Administrations should aim for full availability of circuits on intercontinental and ARQ radio routes operated with signalling in accordance with Recommendations U.1, U.11, U.12 and U.20. Where an Administration is unable to provide the full availability, it should provide an availability to achieve not less than 90% of the full availability capacity relative to the number of circuits on the route at a grade of service of one in 50.

1 Introduction

1.1 Table 1/F.64 shows values for manual traffic carried. If for the purpose of design (as distinct from the maintenance of rapid service) it is desired to obtain values for offered traffic in erlangs, these may be determined by adding the respective values of lost traffic to the figures for carried traffic in Table 1/F.64.

1.2 Table 1/F.64 is directly applicable only to full-availability groups of circuits that are operated either wholly as bothway circuits, or wholly as unidirectional circuits.

1.3 Table 2/F.64 shows values for traffic offered in the automatic service and is directly applicable to full-availability groups and groups with availabilities between 10 and 50.

Given the traffic offered (A) in erlangs and the availability (K), the number of circuits required to provide a loss probability (B) of 0.02 may be determined from Table 2/F.64. Groups of up to 200 circuits and availabilities of 10, 20, 30, 50 and N circuits (N circuits corresponding to full availability) are covered. The method of applying the table is shown in Figure 1/F.64.

1.4 Where groups of circuits are divided into bothway and unidirectional components, the division and number of circuits in each component will be agreed between Administrations.

TABLE 1/F.64

Traffic capacity table for manually selected telex circuits (Note 1)

Number of circuits	Average intensity for traffic carried in the busy hour, expressed in erlangs, for a grade of service (probability of loss) of:		
	1 in 10 (Note 2)	1 in 30 (Note 3)	1 in 50 (Note 3)
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1	0.2	0.066	0.034
2	0.9	0.43	0.33
3	1.5	0.89	0.76
4	2.3	1.49	1.29
5	3.2	2.17	1.92
6		2.92	2.67
7		3.77	3.44
8		4.66	4.25
9		5.56	5.09
10		6.47	5.93
11		7.39	6.79
12		8.31	7.67
13		9.24	8.57
14		10.2	9.48
15		11.1	10.4
16		12.1	11.3
17		13.0	12.3
18		13.9	13.2
19		14.9	14.1
20		15.9	15.0

Note 1 — Table 1/F.64 makes allowance for the manual operator to continue the search for a free line over the group of circuits concerned for a period of 30 seconds if all are engaged, after which the search is abandoned and the call suspended.

Note 2 — Column *b* of Table 1/F.64 will, in general, only be used in respect of small groups of circuits of considerable length, having due regard to the desire to provide a rapid service, as well as to economic considerations.

Note 3 — In all other cases the figures of column *c* shall be used in preference to those of column *d*.

N K	Availability			N
	10		50	
100	64.0		84.1	88.0
102	65.3		85.9	89.9
104	66.5		87.6	91.9
106	67.8		89.4	93.8
[N]		[A]		
Circuits		Traffic offered (erlangs)		
196	125.4		170.4	182.2
198	126.7		172.2	184.2
200	128.0		174.1	186.2

FIGURE 1/F.64

An example for using Table 2/F.64

TABLE 2/F.64

Traffic capacity table for automatically circuits

N \ K					
	10	20	30	50	... N
A					
1					0.02
2					0.22
3					0.60
4					1.09
5					1.66
6					2.28
7					2.94
8					3.63
9					4.34
10	5.08				5.08
11	5.68				5.84
12	6.29				6.61
13	6.90				7.40
14	7.52				8.20
15	8.15				9.01
16	8.77				9.83
17	9.40				10.7
18	10.0				11.5
19	10.7				12.3
20	11.3	13.2			13.2
21	12.0	13.9			14.0
22	12.6	14.7			14.9
23	13.3	15.4			15.8
24	13.9	16.2			16.6
25	14.6	16.9			17.5
26	15.2	17.7			18.4
27	15.9	18.4			19.3
28	16.5	19.2			20.2
29	17.2	19.9			21.0
30	17.8	20.7	21.9		21.9
31	18.5	21.5	22.7		22.8
32	19.2	22.2	23.5		23.7
33	19.8	23.0	24.3		24.6
34	20.5	23.8	25.1		25.5
35	21.1	24.6	26.0		26.4
36	21.8	25.3	26.8		27.3
37	22.5	26.1	27.6		28.3
38	23.1	26.9	28.4		29.2
39	23.8	27.7	29.2		30.1
40	24.4	28.4	30.0		31.0
41	25.1	29.2	30.8		31.9
42	25.8	30.0	31.7		32.8
43	26.4	30.8	32.5		33.8
44	27.1	31.6	33.3		34.7
45	27.8	32.3	34.1		35.6
46	28.4	33.1	34.9		36.5
47	29.1	33.9	35.8		37.5
48	29.8	34.7	36.6		38.4
49	30.4	35.5	37.4		39.3
50	31.1	36.3	38.2	40.3	40.3

TABLE 2/F.64
(cont'd)

N \ K	K	10	20	30	50	... N
	A					
50		31.1	36.3	38.2	40.3	40.3
51		31.8	37.1	39.1	41.1	41.2
52		32.4	37.9	39.9	42.0	42.1
53		33.1	38.7	40.7	42.8	43.1
54		33.8	39.4	41.6	43.7	44.0
55		34.4	40.2	42.4	44.6	44.9
56		35.1	41.0	43.2	45.4	45.9
57		35.7	41.8	44.1	46.3	46.8
58		36.4	42.6	44.9	47.2	47.8
59		37.1	43.4	45.7	48.0	48.7
60		37.7	44.2	46.6	48.9	49.6
61		38.4	45.0	47.4	49.8	50.6
62		39.1	45.8	48.2	50.6	51.5
63		39.7	46.6	49.1	51.5	52.5
64		40.4	47.4	49.9	52.4	53.4
65		41.0	48.2	50.8	53.3	54.4
66		41.7	49.0	51.6	54.1	55.3
67		42.4	49.8	52.4	55.0	56.3
68		43.0	50.6	53.3	55.9	57.2
69		43.7	51.4	54.1	56.7	58.2
70		44.4	52.2	55.0	57.6	59.1
71		45.0	53.0	55.8	58.5	60.1
72		45.7	53.8	56.6	59.4	61.0
73		46.3	54.6	57.5	60.2	62.0
74		47.0	55.4	58.3	61.1	62.9
75		47.6	56.2	59.2	62.0	63.9
76		48.3	57.0	60.0	62.9	64.9
77		49.0	57.8	60.9	63.8	65.8
78		49.6	58.6	61.7	64.6	66.8
79		50.3	59.4	62.6	65.5	67.7
80		50.9	60.2	63.4	66.4	68.7
81		51.6	61.0	64.3	67.3	69.6
82		52.2	61.8	65.1	68.2	70.6
83		52.9	62.6	66.0	69.0	71.6
84		53.6	63.4	66.8	69.9	72.5
85		54.2	64.2	67.6	70.8	73.5
86		54.9	65.0	68.5	71.7	74.5
87		55.5	65.9	69.3	72.6	75.4
88		56.2	66.7	70.2	73.5	76.4
89		56.8	67.5	71.0	74.3	77.3
90		57.5	68.3	71.9	75.2	78.3
91		58.1	69.1	72.7	76.1	79.3
92		58.8	69.9	73.6	77.0	80.2
93		59.4	70.7	74.4	77.9	81.2
94		60.1	71.5	75.3	78.8	82.2
95		60.7	72.3	76.2	79.7	83.1
96		61.4	73.1	77.0	80.5	84.1
97		62.0	73.9	77.9	81.4	85.1
98		62.7	74.7	78.7	82.3	86.0
99		63.3	75.5	79.6	83.2	87.0
100		64.0	76.3	80.4	84.1	88.0

TABLE 2/F.64
(concluded)

N \ K	K	10	20	30	50	... N
	A					
100		64.0	76.3	80.4	84.1	88.0
102		65.3	77.9	82.1	85.9	89.9
104		66.5	79.6	83.8	87.6	91.9
106		67.8	81.2	85.5	89.4	93.8
108		69.1	82.8	87.3	91.2	95.7
110		70.4	84.4	89.0	93.0	97.7
112		71.7	86.0	90.7	94.8	99.6
114		72.9	87.6	92.4	96.6	101.6
116		74.2	89.3	94.1	98.3	103.5
118		75.5	90.9	95.8	100.1	105.5
120		76.8	92.5	97.5	101.9	107.4
122		78.1	94.1	99.3	103.7	109.4
124		79.3	95.7	101.0	105.5	111.3
126		80.6	97.3	102.7	107.3	113.3
128		81.9	99.0	104.4	109.1	115.2
130		83.2	100.6	106.1	110.9	117.2
132		84.5	102.2	107.9	112.7	119.1
134		85.7	103.8	109.6	114.5	121.1
136		87.0	105.4	111.3	116.3	123.1
138		88.3	107.0	113.0	118.1	125.0
140		89.6	108.7	114.7	119.9	127.0
142		90.8	110.3	116.5	121.7	128.9
144		92.1	111.9	118.2	123.5	130.9
146		93.4	113.5	119.9	125.3	132.9
148		94.7	115.1	121.6	127.1	134.8
150		96.0	116.7	123.4	128.9	136.8
152		97.2	118.3	125.1	130.7	138.8
154		98.5	120.0	126.8	132.5	140.7
156		99.8	121.6	128.5	134.3	142.7
158		101.1	123.2	130.3	136.1	144.7
160		102.4	124.8	132.0	137.9	146.6
162		103.6	126.4	133.7	139.7	148.6
164		104.9	128.0	135.4	141.5	150.6
166		106.2	129.6	137.2	143.3	152.6
168		107.5	131.2	138.9	145.1	154.5
170		108.8	132.9	140.6	146.9	156.5
172		110.0	134.5	142.3	148.7	158.5
174		111.3	136.1	144.1	150.5	160.4
176		112.6	137.7	145.8	152.3	162.4
178		113.9	139.3	147.5	154.1	164.4
180		115.2	140.9	149.2	155.9	166.4
182		116.4	142.5	151.0	157.7	168.3
184		117.7	144.1	152.7	159.6	170.3
186		119.0	145.7	154.4	161.4	172.3
188		120.3	147.3	156.2	163.2	174.3
190		121.6	148.9	157.9	165.0	176.3
192		122.8	150.6	159.6	166.8	178.2
194		124.1	152.2	161.3	168.6	180.2
196		125.4	153.8	163.1	170.4	182.2
198		126.7	155.4	164.8	172.2	184.2
200		128.0	157.0	166.5	174.1	186.2

Recommendation F.65

TIME-TO-ANSWER BY OPERATORS AT INTERNATIONAL TELEX POSITIONS

The CCITT,

considering

- (a) that a rapid answer to calling signals by the operators at incoming international telex positions is essential to ensure a rapid telex service;
- (b) that a rapid answer is a very important factor in the efficient utilization of international telex circuits;
- (c) that the time-to-answer has a direct effect on the costs of staffing and of switchboard provision;

unanimously declares

that, wherever possible, Administrations should give priority to the answering of incoming calling signals at international terminal exchanges and should endeavour to ensure that 95% of calls are answered within 30 seconds.

Recommendation F.68

ESTABLISHMENT OF THE AUTOMATIC INTERCONTINENTAL TELEX NETWORK

1 Preamble — Definitions connected with the numbering of telex subscribers and the routing of telex and gentex calls in intercontinental service

These definitions are proposed to facilitate the reading of recommendations and surveys on the question of intercontinental telex and gentex traffic; they have been derived to large extent from the definitions submitted by telephone experts for studying the analogous problem in intercontinental telephone operation and adapted to the special features of the telex and gentex services.

Preliminary note — The word *continent* is not necessarily used in its geographical sense: traffic characteristics may cause countries of geographically different continents to be included in one continent (within the meaning of these definitions).

1.1 *Circuits*

1.1.1 A **national circuit** is one connecting two exchanges in the same country.

1.1.2 An **international circuit** is one connecting two exchanges in different countries, whether or not they are in different continents.

1.1.3 A **continental circuit** is one established between two exchanges in the same continent.

1.1.4 An **intercontinental circuit** is one connecting two exchanges situated in different countries in different continents.

1.1.5 An **intercontinental transit circuit** is an intercontinental circuit used primarily for routing intercontinental transit traffic.

1.2 Exchanges

1.2.1 A **national exchange** is the termination centre for national circuits only.

1.2.2 An **international exchange** is a centre where international circuits, and in general national circuits, terminate.

1.2.3 A **continental exchange** is an international centre where the international circuits terminating there are solely continental circuits.

1.2.4 **intercontinental transit exchange**: An exchange of this type would be directly connected to intercontinental transit circuits and would provide facilities to interconnect intercontinental transit circuits and trunks to terminal exchanges. It would also provide facilities for the interconnection of intercontinental transit circuits.

1.2.5 **terminal international exchange**: An international exchange of this type would not be connected directly to intercontinental transit circuits, but would gain access to the intercontinental transit network through one (or more) intercontinental transit exchanges.

1.3 Connections

1.3.1 **international connection**: Any connection between two stations situated in different countries, whether established between different continents or one continent.

1.3.2 **continental connection**: Connection established between stations within the same continent.

1.3.3 **intercontinental connection**: Connection established between two different continents.

1.4 Numbering

1.4.1 **subscriber's national telex number**: Set of figures to be selected by a caller in the same country to obtain this subscriber.

1.4.2 **local number**: In national telex networks, when abridged call numbers are used for local or short-distance traffic, the abridged number is called the *local number*.

1.4.3 **prefix giving access to the long-distance automatic telex network**: In national telex networks, when abridged call numbers are used for local or short-distance traffic, an access prefix should be selected to give access to the higher level network (long-distance level).

1.4.4 **prefix giving access to the international automatic telex network**: This expression is taken to mean the digit or digits that a subscriber must select (if necessary after the prefix giving access to the automatic long-distance telex network) to obtain access to the automatic telegraph switching equipment for international telex traffic.

1.4.5 **prefix giving access to the intercontinental automatic transit telex network**: This expression is taken to mean the digit or digits that a subscriber must select (if necessary after the prefix giving access to the international telex network) to obtain access to automatic telegraph switching equipment for intercontinental transit telex traffic.

1.4.6 The origin country is free to use only a common *access prefix to the international network* instead of two different prefixes for access to the international network and the intercontinental network.

1.4.7 **telex network identification code**: Letter or group of two letters serving to identify the subscribers or stations of a country (or a network in a country).

1.4.8 **telex destination code**: A group of digits characterizing, for routing purposes, the subscribers or stations of a country, or of a network in a country.

1.5 Routing

1.5.1 **automatic alternative routing**: A facility whereby a call, which cannot find a free circuit on the primary route at an international outgoing exchange, is automatically diverted to a secondary route.

1.5.2 **emergency routes**: The circuit(s) to be used in case of complete interruption or major breakdown of the primary and secondary routes. The emergency routes may pass through any country.

1.5.3 **primary routes**: The circuits normally used in a given relation.

1.5.4 **rerouting**: When congestion occurs at an intermediate transit exchange, rerouting permits a call to be remade via a secondary route from the outgoing international exchange.

1.5.5 **secondary routes:** The circuits to be used when the primary routes are congested. The secondary route(s) may pass through the same countries as the primary routes or through different countries. In manual and semi-automatic operation, secondary routes may also be used when the transmission on the primary route is not sufficiently good, or if traffic is to be handled outside the normal hours of service on the primary routes.

2 Recommendation for the establishment of the automatic intercontinental telex network

The CCITT,

considering

(a) that intercontinental telex traffic is rapidly growing; in particular, the development of automatic subscriber selection in intercontinental relations has been made possible. The time differences between terminal countries in such relations and the consequent differences in the hours of peak traffic loading may make it economical to employ tandem transit routing to a much greater extent than has been necessary in the European network. The development of a comprehensive plan for the economical employment of tandem routing depends among other considerations, on agreement on numbering and routing plans;

(b) that a worldwide service includes countries that are served by several telex networks. A telex subscriber's call number in a worldwide service must contain all the digits to be transmitted by the caller in order to establish the connection, irrespective of the routing channel;

(c) that to facilitate automatic routing and charging for calls, the number of digits to be examined by the charging equipment must be limited;

unanimously declares the following:

2.1 General characteristics of the network

2.1.1 It must be possible to establish the intercontinental network by means of:

- a) submarine or underground cable telegraph circuits;
- b) telegraph circuits via telecommunication satellites; and
- c) telegraph circuits on radio channels.

2.1.2 When circuits via various transmission facilities exist between two intercontinental transit exchanges, all such circuits must, for automatic selection purposes, be regarded as included in a single system.

2.1.3 Administrations will agree on whether a given group of circuits should be operated on a one-way, bothway or partially divided basis.

2.1.4 The traffic to be routed over these circuits may be either telex or gentex traffic; it may be either transit or terminal traffic.

2.1.5 Countries (or networks) should be connected by direct circuits where this can be justified taking into account the relative economics of transit switching and bothway working where the time difference between the terminal centres makes this a significant factor.

2.1.6 Where it is not practicable to provide direct circuits, the number of transit exchanges involved in a normally routed call should be reduced in so far as possible.

2.1.7 Where the same group of circuits carries traffic originated by subscribers in the country providing facilities and transit traffic originated by another country, the Administration providing the transit exchange shall ensure that the transit calls receive a grade of service not inferior to that given to their own subscribers.

2.2 Identification of telex subscribers

2.2.1 For international purposes, a subscriber's national number should be accompanied by one or two letters, called the *telex network identification code*, characterizing either:

- a) the subscriber's country, if in that country there is only one telex network; or
- b) the telex network to which the subscriber belongs in a country where there are several networks operated by different agencies.

2.2.2 An identification code is especially valuable for countries possessing several telex networks operated by different companies and when national numbers do not clearly distinguish between such networks. In such circumstances, it is recommended that the identification code should be clearly published in national directories. Furthermore, Administrations shall ask subscribers to give every possible publicity to their telex identification letters (by including them in the letterheads of their correspondence for example).

2.2.3 The answerback codes for subscriber equipment used in intercontinental telex services should include the telex network identification code allocated to the country or network concerned (see Recommendation F.60, § 3.4.2).

2.2.4 For Administrations using two-character telex network identification codes these codes should be the same as the identification codes of their country (or network) for the telegram retransmission system (see Recommendations F.31 and F.96).

2.2.5 The one-character telex network identification code X is used to identify mobile stations that may be connected to the international telex network, regardless of the transmission medium used (maritime mobile-satellite, VHF, HF). The two-character codes commencing with X will not be allocated to national telex networks.

2.2.6 The list of telex network identification codes has been compiled by the CCITT and published in accordance with Recommendation F.96.

Note — If in any country the telex and gentex networks are separate, two identification codes might be necessary, one for telex and the other for gentex.

2.3 Routing

2.3.1 On international circuits digits only will be transmitted for selection control.

2.3.2 For each country, or for each network in countries possessing several telex networks, a group of two or three digits — *the telex destination code* — will uniformly characterize each country or network for the purposes of selection in intercontinental transit circuits. (See Recommendation F.69 for the list of telex destination codes.)

2.3.3 The access prefix to be selected in an outgoing country by a subscriber wanting to put through a call to another country via the intercontinental transit network shall be decided on by the Administration responsible for the calling subscriber. This is a matter for internal regulation.

2.3.4 There are two possibilities in relations between the international exchange of the outgoing country and an intercontinental exchange:

2.3.4.1 There are direct trunk circuits between the international exchange in the outgoing country and the intercontinental exchange (see Figure 1/F.68). On these circuits, it should suffice to transmit the destination code of the country required, followed by the national number of the subscriber required;

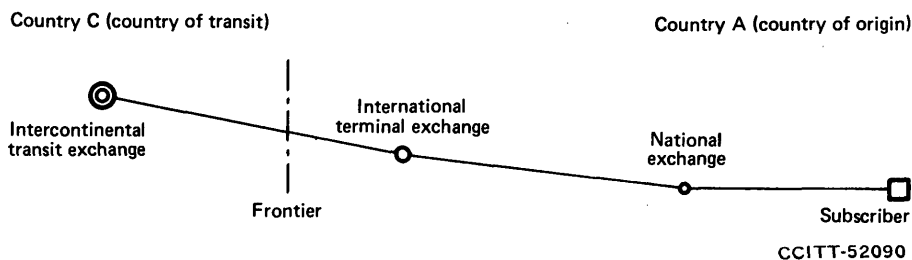


FIGURE 1/F.68

2.3.4.2 There are no such direct trunk circuits (see Figure 2/F.68). There are then direct circuits between the international exchange in the outgoing country and the international continental exchange in the transit country, adjacent to the intercontinental exchange. Hence this adjacent exchange will have to be traversed to reach the intercontinental network.

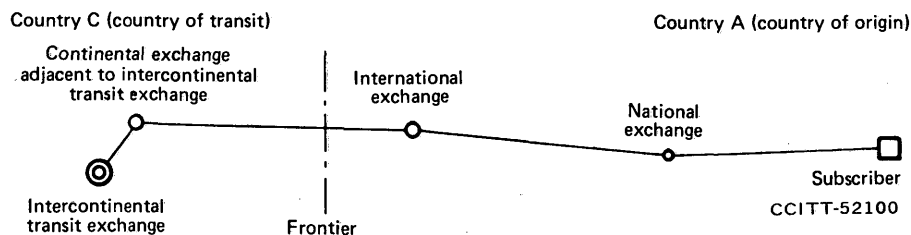


FIGURE 2/F.68

2.3.5 Code 00 should be used as the standard access prefix for traversing a continental exchange. A country that might experience difficulty in accepting this 00 code may choose another code for traversing its continental exchange, subject to a bilateral agreement with the other Administration concerned.

2.4 Automatic alternative routing

2.4.1 Provision must be made for the possibility of using automatic alternative routing (see Figure 3/F.68). The putting into operation of automatic alternative routing is a question of the network situation, as it will often be preferable to create new telegraph circuits on a congested route rather than to bring automatic alternative routing into service. Be it noted that the automatic alternative routing method should be considered only if the peak hours on CD are different from those on CF and FD; otherwise, it is to be feared that transit switching equipment F will become saturated.

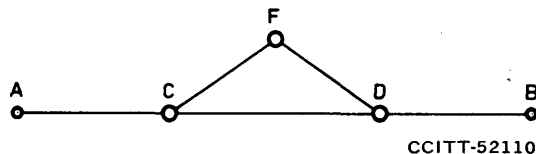


FIGURE 3/F.68

2.5 Automatic re-routing

2.5.1 The complications resulting from automatic re-routing would be out of all proportion to the benefits to be expected therefrom.

2.6 Call recording

2.6.1 In principle the originating exchange is responsible for timing calls, booking calls, repeated attempts, etc. The responsibility of an intercontinental transit exchange should be limited to providing a connection between the calling exchange or subscriber and the required exchange or subscriber.

2.6.2 In accordance with Recommendation U.23, the elapsed time is normally taken as the basis for fixing the chargeable duration even where calls are routed over HF radio circuits fitted with ARQ equipment on the first or subsequent links in the connection.

2.7 Grade of service

2.7.1 Refer to Recommendation F.64.

2.8 Use of radiotelegraph circuits with ARQ equipment

2.8.1 Fully automatic operation on a radiotelegraph circuit incorporating ARQ equipment can be considered only if this circuit possesses adequate stability.

2.8.2 Before incorporating a circuit with ARQ equipment in the fully automatic switched network, the Administrations must carry out extended trials.

2.8.3 These trials should be made under normal traffic conditions, over a minimum period of three consecutive hours chosen from the busy period (or periods), when heavy traffic is foreseen to occur on the route under consideration (allowing for the traffic, whether terminal or transit, that prevails on the route according to the season).

2.8.4 The condition that must be fulfilled before a circuit can be accepted for use in a fully automatic network is that its mean efficiency factor measured over periods of 20 consecutive seconds each, shall not fall below 80% for more than 10% of the total time involved in the measurements. The measurements must be repeated as often as will be necessary for the Administration to have an assessment of the suitability of the circuit.

2.8.5 The attention of the Administrations is drawn to the fact that, before offering fully automatic transit working on a radio route incorporating ARQ equipment, the grade of service on the route under consideration must be only one call lost in 50.

2.8.6 If these conditions are not complied with, it would be better to retain semi-automatic operation.

Recommendation F.69

PLAN FOR TELEX DESTINATION CODES

The CCITT,

considering

(a) that for controlling the selection of international transit circuits, a group of digits, called a *telex destination code*, should be used to identify each country (or network) in a uniform manner;

(b) that the CCITT therefore has to set up a worldwide list of telex destination codes; for this purpose it has been necessary to decide whether such codes should always comprise three digits or whether they should be made up of one, two or three digits;

(c) that the advantages of uniform three-digit codes are:

- i) by allocating the same size code to all countries difficulties would not arise as to the relative importance of the various countries with regard to the telex service;
- ii) uniform codes afford some simplification of the design of registers – particularly transit registers;
- iii) for the European system a uniform three-digit system could be readily compiled by adding a uniform digit to the range of two-digit codes already in use by a number of European Administrations;

(d) that the advantages of a mixed one, two or three-digit arrangement are:

- i) the use of shorter length codes reduces the risk of errors by calling subscribers;
- ii) the storage capacity of registers can be kept to a minimum by allocating shorter codes to systems having long subscribers' numbers;
- iii) the holding time of circuits could be kept to a minimum;
- iv) the maximum number of digits to be examined for routing and other purposes could be kept to a minimum by allocating shorter codes to systems in which the first two digits of a subscriber's number have to be examined in accordance with Recommendation U.7. Similarly, where a country has more than one international exchange the allocation of a shorter code would enable the routing of traffic to be controlled by the examination of a minimum number of digits;

(e) that mixed two-digit and three-digit destination codes have most advantages.

unanimously declares

- (1) that telex destination codes shall comprise two or three digits.

Note – In examining the North American position, it was not possible to allocate a single-digit code that would have satisfied access to both the telex (RCA, ACR, WUI and WU domestic) networks and the TWX network in the United States. Therefore it was decided to allocate the first digits 2 and 3 to a series of two-digit and three-digit codes serving the whole of the American area;

- (2) With regard to the allocation of the first digit:

- 0 – not to be used as first digit
- 1 – see §§ (9) and (10) below
- 2 – North America and adjacent areas
- 3 – South America and adjacent areas
- 4 – Europe and adjacent areas
- 5 – Europe and adjacent areas and maritime mobile-satellite services
- 6 – USSR and adjacent areas
- 7 – Pacific and adjacent areas
- 8 – Middle East, Far East and adjacent areas
- 9 – Africa, Near East and adjacent areas.

Note 1 – The geographical boundaries of the continents have not been rigidly followed to permit maximum flexibility within the code system.

Note 2 – In relations using Type C signalling (Recommendation U.11) code 000 may be used for retest signalling purposes.

Note 3 – In case of the assignment of codes to a maritime mobile-satellite system, a 3 digit code should exceptionally be assigned to each ocean area of the satellite system.

- (3) the number of two-digit codes available is rather restricted. It is undesirable to allocate these to serve individual networks in countries where several networks exist but do not have a coordinated internal numbering scheme;

- (4) it is not advisable to allocate all possible two-digit codes, so as to maintain some flexibility to allow future development in world telex traffic to be taken into account;

- (5) the list of telex destination codes, as established by the World Plan Committee (Paris, 1980) is given in Annex A. Annex A also shows the corresponding telex network identification codes, which are allocated in accordance with Recommendation F.68 (§ 2.2);

- (6) the Member countries of the Union not mentioned in this list that wish to take part in the international automatic telex service should ask the Director of the CCITT for the assignment of an *available* three-digit destination code. In their request they may indicate the available three-digit code preferred. Where the numbering scheme for the appropriate region is exhausted, a code from another region may be allocated;

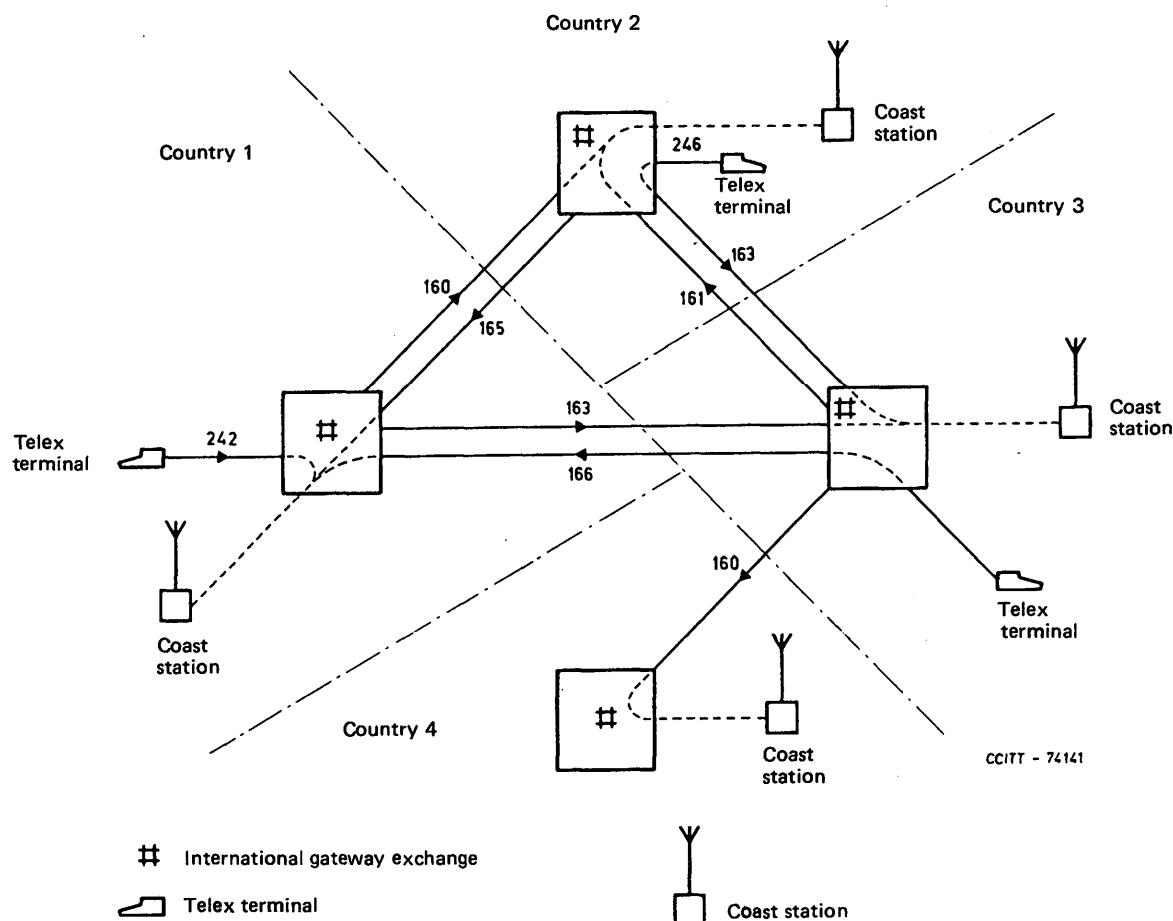
- (7) if the requests submitted by Member countries of the Union involve a change in the telex destination codes already assigned to them, or if the Director of the CCITT finds difficulty in satisfying a request submitted in accordance with § (6), these requests will be referred to Study Group I for guidance on technical issues, any allocation of a specific code number being decided by the World Plan Committee;

- (8) additions and changes that are accepted will be published in the ITU *Operational Bulletin*. They will become effective on the first day of the third month following publication;

- (9) the first digit 1 was initially reserved for special services, which led to its uncoordinated use for a variety of national and international applications in different networks. In all future networks and as soon as practicable in existing networks, it should be possible to allocate the 1 series for destination codes for international purposes.

- (10) a block of ten destination codes (160-169) has been set aside to cover the particular needs for access to maritime mobile HF and MF radiotelex services. The choice of code or codes for these applications is left to individual Administrations for use by their own subscribers and/or (after suitable bilateral arrangements have been reached) by subscribers of other Administrations for transit calls [e.g. via the former Administration's coast station(s)]. (See also the explanatory figure, Figure 1/F.69.)

Note – It is recognized that some Administrations use various codes in the 160-169 series at present for national and international applications.



Note 1 – Country 1 does not use F.69 codes in the 16x range to access its own coast station.

Note 2 – Country 1 uses F.69 codes 160 and 163 to access coast stations in countries 2 and 3 respectively (as agreed bilaterally).

Note 3 – Country 2 has agreed bilaterally to use F.69 codes 165 and 163 to access coast stations in countries 1 and 3 respectively.

Note 4 – Country 2 uses F.69 code 163 internally for test purposes and therefore subscribers select a code 246 and this is translated as the international link to 163.

Note 5 – Country 3 has agreed bilaterally to use F.69 codes 166 and 161 to access coast stations in countries 1 and 2 respectively.

Note 6 – Country 3 does not have code 166 available for subscriber use as this is used as a special operator code. However, code 160 is available and this is used by subscribers and is translated to 166 at the international exchange.

Note 7 – Country 3 has agreed bilaterally with Country 4 to use F.69 code 165 to access the coast station in Country 4. This is possible event though Countries 1 and 2 use the same code.

Note 8 – Subscribers in Country 4 do not access coast stations in other countries.

FIGURE 1/F.69

Example of use of F.69 codes in the 16x range (see § 10)

ANNEX A

(to Recommendation F.69)

List of telex destination codes and telex network identification codes

Note 1 – Codes with no entry have not yet been allocated.

Note 2 – (xx): This TNIC is not yet listed in the official TNIC List.

100-149 }	Temporarily reserved for special	292 VB	British Virgin Islands
151-159 }	administrative services	293 CP	Cayman Islands
160		294 WG	Trinidad and Tobago
161		295 GY	Guyana
162		296 TQ	Turks and Caicos Islands
163		297 BS	Bahamas (Commonwealth of the)
164	X Maritime Mobile HF and MF Radiotelex	298 MR	Martinique (French Department of)
165		299 GL	Guadeloupe (French Department of)
166		300 FG	French Guiana (French Department of)
167		301	
168		302	
169		303	Aruba
170-179	Temporarily reserved for special	304 SN	Suriname (Republic of)
	administrative services	305 PY	Paraguay (Republic of)
200 UA	Alaska (United States of America) (RCA)	306 FK	Falkland Islands (Malvinas)
201 DR	Dominican Republic (RCA)	307 ¹⁾	
202 DI	Dominican Republic (AACR)	308 ED	Ecuador
203 HI	Haiti (Republic of)	309 BV	Bolivia (Republic of) (ENTEL)
204 QN	S. Pierre and Miquelon (French Department of)	31 VC	Venezuela (Republic of)
205 PT	Puerto Rico (RCAC)	32 UY	Uruguay (Eastern Republic of)
206 PD	Puerto Rico (AACR)	33 AR	Argentine Republic
207		34	Chile ²⁾
208 VN	United States Virgin Islands and S. Croix	35 CO	Colombia (Republic of)
209	Puerto Rico (PRCA)	36 PE	Peru
21 CA	Canada (except TWX)	37	Central America (integrated code):
22 ME	Mexico	371 BZ	Belize
23	United States of America ^{b)} (except TWX)	372 GU	Guatemala (Republic of)
240 (PB)	Puerto Rico (TRT)	373 SR	El Salvador (Republic of)
241 DA	Dominican Republic (Agencia Mirador Network)	374 HO	Honduras (Republic of)
242		375 NU	Nicaragua
243		376 CR	Costa Rica
244		378 ²⁾	
245		379 PG	Panama (Republic of) (INTEL)
246		38 BR	Brazil (Federative Republic of)
247	United States of America	390 NA	Netherlands Antilles
248		391 LA	Anguilla
249		392 WB	Barbados
25 UQ	United States of America (TWX)	393 AK	Antigua and Barbuda
26	Canada (TWX)	394 DO	Dominica (Commonwealth of)
270		395 GA	Grenada
271		396 MK	Montserrat
272		397 KC	Saint Christopher and Nevis
273		398 LC	Saint Lucia
274		399 VQ	Saint Vincent and the Grenadines
275		400	
276		401	
277		402 LU	Luxembourg
278		403 MT	Malta (Republic of) (GTC)
279		404 P	Portugal
28 CU	Cuba	405 GK	Gibraltar
290 BA	Bermuda	406 MW	Malta (Republic of) (TELEMALTA)
291 JA	Jamaica	407 M	Morocco (Kingdom of)

¹⁾ Previously allocated to the Republic of Bolivia.

²⁾ Previously allocated to the Republic of Panama.

408	DZ	Algeria (People's Democratic Republic of)	592		
409	TN	Tunisia	593		
41	D	Germany (Federal Republic of)	594		
42	F	France ^{c)}	595		
42	MC	Monaco ^{c)}	596		
43	I	Italy	597		
44	NL	Netherlands (Kingdom of the)	598		
45	CH	Switzerland (Confederation of) ^{c)}	599		
45	FL	Liechtenstein (Principality of) ^{c)}	600		
46	B	Belgium	601	GR	Greece
47	A	Austria	602		
480			603		
481			604	AB	Albania (Socialist People's Republic of)
482			605	CY	Cyprus (Republic of)
483			606	IL	Israel (State of)
484			607	TR	Turkey
485			608		
486			609		
487			61	H	Hungarian People's Republic
488			62	YU	Yugoslavia (Socialist Federal Republic of)
489			63	PL	Poland (People's Republic of)
490	BN	Bahrain (State of)	64	SU	Union of Soviet Socialist Republics
491	IK	Iraq (Republic of)	65	R	Romania (Socialist Republic of)
492	SY	Syrian Arab Republic	66	C	Czechoslovak Socialist Republic
493	JO	Jordan (Hashemite Kingdom of)	67	BG	Bulgaria (People's Republic of)
494	LE	Lebanon	680		
495	SJ	Saudi Arabia (Kingdom of)	681		
496	KT	Kuwait (State of)	682		
497	DH	Qatar (State of)	683		
498	ON	Oman (Sultanate of)	684		
499			685		
500	EI	Ireland	686		
501	IS	Iceland	687		
502	FA	Faroe Islands (Denmark)	688		
503	GD	Greenland (Denmark)	689		
504	VA	Vatican City State	69	DD	German Democratic Republic
505	SO	San Marino (Republic of)	700	GM	Guam (United States of America) (RCA)
506			701	FJ	Fiji
507			702	FP	French Polynesia
508			703	NE	Papua New Guinea
509			704	HR	Hawaii (United States of America) (RCA)
51	G	United Kingdom of Great Britain and Northern Ireland	705	HM	Hawaii (United States of America) (AACR)
52	E	Spain	706	NM	New Caledonia and Dependencies
530			707	WF	Wallis and Futuna Islands
531			708	HW	Hawaii (United States of America) (WUI)
532			709		Hawaii (United States of America) (WUH)
533			71	AA	Australia
534			72	J	Japan
535			73	IA	Indonesia (Republic of)
536			74	NZ	New Zealand
537			75		Philippines (Republic of the) ^{d)}
538			760	MN	Mariana Islands
539			761	KI	Kiribati (Republic of)
54	S	Sweden	762	(TL)	Tokelau Islands
55	DK	Denmark	763	PW	Palau (Republic of)
56	N	Norway	764		F.S. of Micronesia
57	SF	Finland	765	MS	Marshall Islands
580	X	Maritime Mobile-Satellite Service (available)	766		Australian External Territories ^{b)}
581	X	INMARSAT Atlantic	767		
582	X	INMARSAT Pacific	768		
583	X	INMARSAT Indian Ocean	769		
584			770	SB	American Samoa
585			771	NH	Vanuatu (Republic of)
586			772	RG	Cook Islands
587	X	Maritime Mobile-Satellite Service (available)	773		Hawaii (United States of America) (DATATEL)
588			774	TV	Tuvalu
589			775	ZV	Nauru (Republic of)
590			776	NF	Niue Island
591			777	TS	Tonga (Kingdom of)
			778	HQ	Solomon Islands

779	SX	Western Samoa (Independent State of)	924		
780	BJ	Bangladesh (People's Republic of) ^{a)}	925		
781			926		
782			927		
783			928		
784			929		
785			930		
786			931		
787			932		
788			933		
789			934		
79	AF	Afghanistan (Democratic Republic of)	935		
800	MH	Mongolian People's Republic	936		
801	K	Korea (Republic of)	937		
802	HX	Hongkong	938	DG	Diego Garcia Island
803	CE	Sri Lanka (Democratic Socialist Republic of)	939	AV	Ascension
804	LS	Lao People's Democratic Republic	94	GH	Ghana
805	VT	Viet Nam (Socialist Republic of)	95	SA	South Africa (Republic of) ^{b)}
806	AD	Yemen (People's Democratic Republic of)	960	HL	Saint Helena
807	KA	Democratic Kampuchea	961	RE	Reunion (French Department of)
808	OM	Macao	962	BD	Botswana (Republic of)
809	BU	Brunei Darussalam	963	LO	Lesotho (Kingdom of)
81	IN	India (Republic of)	964	WD	Swaziland (Kingdom of)
82	PK	Pakistan (Islamic Republic of)	965	SZ	Seychelles (Republic of)
83	BM	Burma (Socialist Republic of the Union of)	966	IW	Mauritius
84	MA	Malaysia	967	ST	Sao Tome and Principe (Democratic Republic of)
85	CN	China (People's Republic of) ^{d)}	968		
86	TH	Thailand	969	BI	Guinea Bissau (Republic of)
87	RS	Singapore (Republic of)	970	KN	Cameroon (Republic of)
88	IR	Iran (Islamic Republic of)	971	RC	Central African Republic
890	BT	Bhutan (Kingdom of)	972	BC	Benin (People's Republic of)
891	NP	Nepal	973	GO	Gabonese Republic
892			974	MQ	Mauritania (Islamic Republic of)
893	EM	United Arab Emirates (EMIRTEL)	975	NI	Niger (Republic of the)
894			976	KD	Chad (Republic of)
895	YE	Yemen Arab Republic	977	TO	Togolese Republic
896	MF	Maldives (Republic of)	978	UV	Burkina Faso
897			979	DJ	Djibouti (Republic of)
898			980	ET	Ethiopia
899	KP	Democratic People's Republic of Korea	981	KG	Congo (People's Republic of the)
900	SM	Somali Democratic Republic	982	ZR	Zaire (Republic of)
901	LY	Libya (Socialist People's Libyan Arab Jamahiriya)	983	CI	Côte d'Ivoire (Republic of the)
902	ZA	Zambia (Republic of)	984	SD	Sudan (Democratic Republic of the)
903	UU	Burundi (Republic of)	985	MJ	Mali (Republic of)
904	MI	Malawi	986	MG	Madagascar (Democratic Republic of)
905	NG	Nigeria (Federal Republic of)	987	KE	Kenya (Republic of)
906	SG	Senegal (Republic of)	988	UG	Uganda (Republic of)
907	ZW	Zimbabwe (Republic of)	989	TZ	Tanzania (United Republic of) (mainland)
908	WK	Namibia	990	TA	Zanzibar (Tanzania)
909	RW	Rwandese Republic	991	AN	Angola (People's Republic of)
91	UN	Egypt (Arab Republic of)	992	MO	Mozambique (People's Republic of)
920			993	CV	Cape Verde (Republic of)
921			994	KO	Comoros (Islamic Federal Republic of the)
922			995	GE	Guinea (Republic of)
923			996	GV	Gambia (Republic of the)
			997	LI	Liberia (Republic of)
			998	SE	Sierra Leone
			999	EG	Equatorial Guinea (Republic of)

^{a)} Within this national code and following a decision by the Chilean Telecommunication Administration, the following codes have been allocated to identify the different telex networks in Chile:

Télex Chile (Comunicaciones Telegráficas S.A.)	342	CL
TC (Transradio Chilena)	343	CK
CM (Comunicaciones Mundiales S.A.)	344	CZ
ENTEL (Empresa Nacional de Telecomunicaciones S.A.)	345	CB
TEXCOM (Telecomunicaciones Internacionales)	346	CT

- b) Within this national code and following a decision by the Administration of the United States of America, the following codes have been allocated to identify the different carriers of the United States:

230	UD	Western Union Telegraph Company
231	UT	TRT Telecommunications Corporation
232	UR	RCA Global Communications (an MCI Company)
233	UB	Graphnet Corporation
234	UI	ITT World Communications
235		ITT World Communications (DTS)
236	UW	Western Union International (an MCI Company)
237	UC	Consortium Communications International, Inc.
238	(UF)	FTCC Telecommunications
239	UE	Telenet Communications Corporation

- c) Integrated numbering plan.

- d) Within this national code and following a decision by the National Telecommunications Commission, the following codes have been allocated to identify the different telex networks in the Philippines:

Capitol Wireless, Inc. (CAPWIRE)	751	PS
Philippine Global Communications, Inc. (PHILCOM)	752	PH
Globe-Mackay Cable and Radio Corp. (ITT)	754	PM
Eastern Telecommunications Philippines, Inc. (ETPI)	756	PN
Radio Communications of the Philippines Inc. (RCPI)	757	PI
Philippine Telegraph and Telephone Corp. (PTT)	758	PU

The following codes are not allocated: 753, 755 and 759

- e) The remaining combinations in the series 78 will not be allocated until the stock of spare 3-digit codes for the region is exhausted.
- f) Within this national code, the Telecommunications Administration of the People's Republic of China has notified that the code 855 has been allocated to the province of Taiwan.
(Reference: Notification No. 1157 of 10 December 1980.)
- g) The Australian Administration has also informed that as part of code 766 the telex code for Norfolk Island is 766 3. (NV)
- h) As requested by South Africa, the telex network identification codes (TNIC) have been allocated to the following geographical areas:

BP Bophuthatswana CX Ciskei TT Transkei VM Venda.

Abbreviations

AACR	All America Cables and Radio, Inc.
EMIRTEL	The Emirates Telecommunication Corporation Ltd.
ENTEL	Empresa Nacional de Telecomunicaciones
GTC	Government Telecommunications Centre (Malta)
INTEL	Instituto Nacional de Telecomunicaciones
RCA	RCA Global Communications, Inc.
RCAC	Radio Corporation of America Communications, Inc.
TELEMALTA	Telemalta Corporation
TRT	TRT Telecommunications Corporation
TWX	TWX Network
WCA	West Coast of America Telegraph Co. Ltd.
WUH	Western Union of Hawaii, Inc.
WUI	Western Union International, Inc.
WUI CARIB	Western Union International Caribbean, Inc.

EVALUATING THE QUALITY OF THE INTERNATIONAL TELEX SERVICE

1 Introduction

1.1 The Quality of Service is a measure of the perceived performance of the telex network. The perception of the service performance varies between that of the calling subscriber, the origin Administration, the destination Administration and the called subscriber. For example, national network difficulties in reaching the origin international exchange will usually be noticed only by the calling subscriber. However, if the origin or destination Administration automatically retries to reach the wanted subscriber following an unsuccessful call attempt, these reattempts are not seen by that part of the network that precedes it. Conversely, a called subscriber is unaware of the number of times that call attempts are being made to his number, if his machine is busy or out of order.

1.2 The main criteria of service performance from the users' viewpoint are:

- a) the ease in establishing a connection;
- b) the retention of the established connection;
- c) the satisfactory transmission quality;
- d) the integrity of billing.

1.3 Where possible, the critical areas of service performance should be measured in a manner that provides both origin and destination Administrations with comparable data. For example, arrangements to ensure concurrency of the periods of observation by the two Administrations involved in each given relation is of great importance. These measurement should, if possible, show the performance as perceived in the originating network and in the destination network.

1.4 Where a subscriber number is found to be "hard to reach" (HTR), then, if possible, this number should be separately identified to allow the origin and destination Administrations mutually to analyze the cause of the problem.

2 Method of measuring quality of service

2.1 Administrations should draw up a programme for telex observations designed to evaluate the quality of the service given to subscribers in their automatic and semi-automatic international services.

2.2 Where Administrations have equipment that automatically records details of calls, this information may be used to compile details of network performance.

2.3 In order to provide compatible data between the origin and destination networks, where possible, Administrations should measure the perceived performance in the origin network (e.g., at the entry point to the international gateway exchange if applicable) in addition to the performance at the international interface looking towards the destination network.

3 Analysis of results

3.1 Administrations should exchange data on a bilaterally agreed basis, commensurate with their operational requirements and, in principle, at least once every six months.

3.2 The results may then be analyzed as shown below (see also Table 1/F.70):

- a) Check effective rate to the destination compared with the average to all destinations.
- b) Check the current rate versus the performance as measured in the past.
- c) Check the performance with results obtained by other Administrations to the same destination.
- d) If the performance has suddenly degraded, perform a detailed analysis where possible, monitor circuit group performance and analyze the performance on a destination code basis. The degradation on a circuit group could be caused by a faulty circuit which, when seized, fails to successfully switch a call.

3.3 Administrations should investigate any HTR report (greater than 50 unsuccessful attempts to one number within a day could be defined as being HTR).

3.3.1 Where national regulatory arrangements allow, Administrations should check that automatic terminal equipment complies with Recommendation U.40. Where poor terminal operating procedures exist, customers should be referred to the guidelines annexed to Recommendation F.60.

3.3.2 The destination Administration should proceed as follows:

3.3.2.1 **OCC** : the called subscriber should be advised that his telex machine is very busy and that extra machines (or terminations) may be necessary.

3.3.2.2 **DER** : is this still a working service? If not, the service signal should be changed to **NP** or **NCH**. If the service is still working, the customer should be asked if the machine is being disabled, e.g., by switching off the power. If a computer interface is being used, is the telex machine being correctly switched in when the computer is taken off-line?

3.3.2.3 **NP/NCH** : consult the origin Administration and ask it to take the matter up with the calling subscriber.

3.3.2.4 Answerback failure:

- a) Where answerback failure occurs, the reasons should be investigated by the destination Administration.
- b) Where a calling automatic terminal fails to interpret the answerback correctly, the reasons should be investigated by the origin Administration.

3.4 Where possible, Administrations should also investigate and report as necessary when frequent cases of clearing from the destination network occurs after charging commences, since a likely cause in such cases is a transmission fault during the text transmission.

3.5 Regular discussion should take place with other Administrations, on a bilateral basis, with a view towards improving the mutual network performance.

4 Explanation of terms used in Table 1/F.70

4.1 *Effective call*

An effective call is defined as a call for which a charge was made or that was successfully completed to a service position. Where possible, measurements should be corrected to take account of any calls for which the charge has been adjusted.

4.2 *Ineffective call*

Any calls or call attempts that did not result in an effective call.

4.3 *Chargeable time*

Duration between the call-connected signal and recognition of the clearing of a call, less 5 to 7 seconds (see Recommendation F.61).

4.4 *Call set-up time*

The time between circuit seizure and the receipt of a call-connected or service signal. This time will not be the same on the national and the international sides of the exchange.

4.5 *PTS failure*

The proceed-to-select signal has not been received within a nominated period after a call signal has been sent to the next exchange.

4.6 *Service signals*

(ABS, DER, NA, NC, NCH, NP, OCC) are defined in Recommendation F.60, § 4.1.

International telex service observations

ADMINISTRATION:			
TRAFFIC OUTGOING FROM:		TO	
PERIOD OF OBSERVATION:	UTC	TO	UTC
ROUTE BUSY HOUR:	UTC	TO	UTC

Number of observations			Point of observation			
National side		International side (Includes retries)	National side		International side	
			Average this destination	Average all destinations	Average this destination	Average all destinations
Effective calls	Percentage					
	Chargeable time (min. sec.)					
	Call setup time (min. sec.)					
Ineffective calls	Percentage					
	Call setup time (min. sec.)					
Analysis of ineffective calls (Expressed as percentage)						
Outgoing circuit selected	PTS Failure					
	OCC Signal received					
	DER Signal received					
	NP Signal received					
	ABS Signal received					
	NC Signal from distant network					
	NA Signal received					
	NCH Signal received					
	Other service signals					
	No answer back after call connect					
	Clear by caller before call connect					
	No call connect (time out)					
	Cut off during call setup					
	Wrong number reached					
	Others (specify)					
No outgoing circuit selected	Incomplete number					
	Clearing before complete number					
	Lack of outgoing circuits					

THE FOLLOWING NUMBERS WERE IDENTIFIED AS HARD TO REACH TELEX SUBSCRIBERS:
SERVICE SIGNAL RECEIVED ON INTERNATIONAL SIDE

[illegible]

Note — An explanation of terms is given in § 4.

**INTERCONNECTION OF PRIVATE TELEPRINTER NETWORKS
WITH THE TELEX NETWORK**

The CCITT,

considering

- (a) the operational provisions for the international telex service laid down in Recommendation F.60;
- (b) that in various countries possessing public telex networks there also exist numerous private teleprinter networks using their own exchanges and conforming with the national regulations of the country concerned;
- (c) that the owners of these private networks are frequently substantial users of the telex service employing multiple subscriber lines;
- (d) that, consequently, it is very desirable to allow the through-connection of calls between teleprinters connected to private exchanges and those connected to the public telex network;
- (e) that in the telephone service the ability to establish calls between stations connected to private and public exchanges has long been available;
- (f) that the operation of the international public telex service must be neither hampered nor limited by private exchanges and hence the conditions for interconnection of the two types of network should be standardized,

declares the following

- 1 Any terminal in a private network that may be directly connected (circuit switched) to a terminal in the international telex network must conform to the relevant requirements for terminals in the telex network as laid down in the Series F and S Recommendations.
- 2 A private network must not be allowed to provide communication between two external telex stations. For the provisions concerning interconnection between international leased circuits and the telex network, see Recommendation D.1 [1].
- 3 Where a private network uses a message store-and-forward system, it may be authorized to accept and deliver messages from and to the public network. The signals from the private network must always conform with the telex network's signalling standards.
- 4 When a private network connected to the telex network offers an external caller the facility of selecting a given extension directly, this should be clearly indicated in the public telex directory.
- 5 Either two-stage or single stage selection may be used as a means of automatic selection of a subsidiary station in the private network by an external caller.
- 6 For two-stage selection the following provisions should be applied:
 - 1) The first stage of the selection should designate the called private network, using a conventional national subscriber number. Following the normal telex procedure, this sequence should start the selection process, resulting in the caller's being connected to a teleprinter (or any other appropriate device in the private network) that is ready to record a message. For networks where the called telex subscriber's answer-back is tripped automatically, this answer-back code must designate and be common to the whole of the private network concerned.

- 2) Application of the second stage by the calling telex subscriber is optional. The selection sequence used to designate a particular extension station may have a special composition for the network that is quite independent of the national telex numbering scheme, but it must always consist of teleprinter characters.
- 3) If the caller wishes to use the second stage of selection, he advises the private network by sending the sequence **XVXV** (combination 24, 22, 24 and 22 successively), to which the network responds with a proceed-to-select signal $\leq \equiv \downarrow \text{GA} \rightarrow$ (combinations 27, 28, 29, 7, 1 and 31 successively).
- 4) This optional second stage of selection is ignored by the telex network. The corresponding selection time in the private network is charged in the same way as a telex call. The composition of the answer-back codes transmitted, where appropriate, after the second stage of selection may therefore be left to the discretion of the subscriber.

7 Where single-stage selection is used for connection to extension stations, the following provisions should be applied.

- 1) The single sequence used to select an extension station must be in the form of a national subscriber number, comprising a number to designate the called private network followed by further digits to specify the particular station required. When the caller sends this full sequence of digits, through-connection to the required extension is achieved, first by selection in the public network then in the private network. For networks where the called telex subscriber's answer-back is automatically tripped, the answer-back sent when the complete connection has been set up is specific to the selected extension.
- 2) If the caller wishes to communicate, not with any specific subsidiary extension, but with a teleprinter (or any other appropriate device in the private network) that is ready to record a message, the selection sequence should consist of the number designating the private network followed by the figure **0**.
- 3) If the caller only sends a selection sequence specifying the private network (i.e. neither **0**, nor a specific extension number nor an end-of-selection signal is added), the call should be automatically diverted after a period of 10 s to a main station.
- 4) If the caller specifies a particular extension station that is engaged or otherwise unavailable, the call should be automatically diverted to a main station.
- 5) With single-stage selection, the answer-back codes for all stations, including extension stations, must comply with the requirements in Recommendation F.60 for the composition of telex answer-back codes.

8 In the event that the external caller fails either partially or totally to meet the requirements of the procedures of a private teleprinter network as in §§ 3 to 7 above, the call should be intercepted by, or directed to, an enquiry teleprinter (or any other appropriate device) in the private network. On no account must the call be terminated by the private network if the procedures are not followed.

Reference

- [1] CCITT Recommendation *General principles for the lease of international (continental and intercontinental) private leased telecommunication circuits*, Rec. D.1.

**INTERNATIONAL TELEX STORE AND FORWARD – GENERAL PRINCIPLES
AND OPERATIONAL ASPECTS**

The CCITT,

considering

- (a) that telex store and forward facilities have been and are being introduced by many countries;
- (b) that a requirement for telex access from the sender in one country to a store and forward facility in another country has been identified;
- (c) that a store and forward unit (SFU) in one country may be interconnected with the store and forward unit in another country;
- (d) that where (b) and (c) above are introduced the facilities and procedures should be sufficiently standardized to allow subscribers to send messages using the same procedures for each country called,

unanimously declares

that the general principles and operational aspects described in this Recommendation should be adopted for the future provision of SFUs internationally.

1 Scope

1.1 This Recommendation describes the general principles and operational aspects of the store and forward facility, operated internationally between two terminal Administrations. It does not, at this stage, cover transit store and forward offered internationally. The general aspects of telex store and forward are given in § 2 of this Recommendation, the service requirements in § 3, the facilities in § 4, the quality of service in § 5, the access principles and procedures in §§ 6, 7, 8, 9 and 10, the status enquiry procedures in § 11, the delivery principles and procedures in §§ 12, 13, 14 and 15, whilst the interconnected provisions are in § 16.

1.2 This Recommendation is one of a series which define telex store and forward facilities. The other Recommendations are:

- Recommendation U.80 International telex store and forward – access from telex;
- Recommendation U.81 International telex store and forward – delivery to telex;
- Recommendation U.82 International telex store and forward – international interconnection of telex store and forward units.

1.3 The service requirements and quality of service provisions along with the single address facility and classes of delivery specified in this Recommendation are essential for the store and forward facility. The other facilities are optional and will be provided at the discretion of the SFU Administration.

2 General

2.1 The telex store and forward facility is provided in addition to the basic telex service. Communication between terminals is on a store and forward basis via the SFU, thus conversational mode connection between terminals is not provided.

2.2 The following four types of facility have been identified:

- a) *International store and forward* is where a subscriber in Country A accesses the store and forward unit in Country B for the transmission of messages to that country.
- b) *Interconnected store and forward* is where the store and forward unit in Country A is connected to the store and forward unit in Country B for the transmission of messages between the two countries.
- c) *International transit store and forward* is where a subscriber in Country A accesses a store and forward unit in Country B for the transmission of messages to other countries.
- d) *Interconnected transit store and forward* is where the store and forward unit in Country A accesses the store and forward unit in Country B for further transmission of messages to other countries.

2.3 Further study is required before c) and d) can be recommended.

2.4 Whilst the Recommendation addresses international and interconnected store and forward, the delivery procedures can be used for international traffic from a national SFU.

2.5 *Limitations of access to service*

2.5.1 The international and interconnected store and forward facility will be provided on the basis of bilateral agreements between the Administrations concerned.

2.5.2 The Administrations providing the store and forward unit (SFU) should be responsible for the barring of international access from unauthorized users and for barring unauthorized types of call such as transit calls to specific countries. The method of barring shall be the responsibility of the Administration of the SFU and is beyond the scope of this Recommendation.

2.5.3 It may also be necessary for Administrations to make provision to selectively block access to international telex store and forward facilities in other countries.

3 **Service requirements**

3.1 *Message identification*

The SFU will provide to the subscriber a unique message identification sequence, readily identifiable for every message, comprising:

- a) the date and time of message input as issued to the originating telex subscriber in accordance with Recommendation U.80;
- b) the message reference as allocated and advised to the originating subscriber at the time of input of the telex message for onward delivery.

3.2 *Service codes*

3.2.1 *Service codes received by the SFU*

All standardized telex service codes (see Recommendation F.60 for list of codes and appropriate Series U Recommendations for their format) must be recognized by the SFU. The retry procedure will be according to the principles of Recommendation U.40 or an alternative specific SFU Recommendation. It is desirable that the SFU attempt to interpret non-standard service codes and continue with the appropriate procedure. If the SFU is unable to interpret a non-standard service code, the SFU will have to give a notification of non-delivery to the calling party and repeat the service codes in the format it received.

3.2.2 *Service codes sent by the SFU*

The following new service codes are used:

- ADD** Please input your international telex number.
- LDE** Maximum acceptable message length or duration has been exceeded.
- BMC** No end of message or end of transmission received, therefore message cancelled.

IAB	Invalid answerback from destination.
ITD	Input transaction accepted for delivery.
TMA	Maximum number of addresses exceeded.
IMA	Input message acknowledgement.
OCC	Store full, SFU unavailable.
ITR	Input transaction rejected.
REJ	Address REjected.

3.3 *Duration of message storage*

The retry procedure will be in accordance with the principles of Recommendation U.40. However, the time for which a message will be held in store will not exceed 24 hours from time of input. If delivery has not been effected, the procedure as in § 3.9 will apply.

3.4 *Maximum message length and duration*

3.4.1 All SFUs should have sufficient capacity to accept at least 24,000 characters per single message. However, for an interim period, 12,000 characters or even lower may be accepted. Initially, it is envisaged that the capacity will vary from one storage unit to another and customers should therefore be advised by their Administrations as to the maximum message length accepted at those SFUs to which they have access.

3.4.2 Where interconnected store and forward is concerned, the maximum acceptable message length of the SFUs should be agreed to by the Administrations concerned.

3.4.3 The maximum input duration for a single transaction should be 2 hours.

3.4.4 If the maximum acceptable message length or duration is reached, the sender should be advised by sending to him the service code **LDE**. Prior to sending the service code **LDE**, an attempt should be made to stop his transmission by sending the letter T, repeatedly.

3.4.5 After sending the service code **LDE**, the SFU will wait for the EOM or EOT and proceed in accordance with § 3.6.

3.5 *Store full indication*

Messages should cease to be accepted when the level of store capacity is reduced to a predetermined state to ensure that any messages in the process of being transmitted to the unit can be accepted in their entirety. The unit will return the service code **OCC** in response to attempts to access the unit for message input.

3.6 *End of transaction and end of message signal*

3.6.1 At the end of each transaction, an end of transmission (EOT) signal is required. This signal is + + + +. However, for follow-on messages, an end of message (EOM) signal is required at the end of each individual message. This can be one of two types as follows:

- a) **NNNN**, which is simply used to separate messages;
- b) **NNNNACK**, which is used to separate messages AND to request the SFU for an input message acknowledgement (IMA) plus reference information of those messages not previously acknowledged. Once this type of EOM is received and acknowledged, the SFU will attempt to deliver the message even if the subscriber clears.

3.6.2 Where there is a stop in transmission for 30 seconds and no EOM or EOT signal is detected, the service code **GA** will be sent to the subscriber.

3.6.3 If the EOM/EOT signal is not received, or transmission does not resume within a further 30 seconds, the SFU shall initiate the clear down procedure.

3.6.4 The incomplete message should either be cancelled or, optionally, sent to an operator assistance position.

3.6.5 If the message is to be cancelled before clearing the connection, the SFU shall inform the subscriber that no EOM/EOT signal has been received by sending the service code **BMC**.

3.6.6 In the event of clear down by the caller without an EOM or EOT signal, the incomplete message(s) will be processed as in § 3.6.4.

3.7 *Input transaction accepted*

The SFU shall send an input transaction accepted code for delivery (ITD) notifying the subscriber that the message(s) has/have been accepted and that delivery would be attempted. Delivery should be attempted even if the call is cleared before the ITD is sent. The ITD should be followed by the message reference(s) and, if applicable, number of messages.

3.8 *Message security*

3.8.1 *Message acceptance*

3.8.1.1 The SFU should only accept messages for delivery to destination addresses served by that SFU. Any messages for other destinations should be given a non-delivery notification with service code NA for the reason of non-delivery.

3.8.1.2 The SFU shall not accept message input unless acceptable identification of the sending subscriber has been received at call set-up.

3.8.1.3 The SFU may validate the called address(es). If this validation is unsuccessful for all addresses the message shall be rejected and the service code ITR should be returned (see Recommendation U.80 § 4.6). However positive validation result does not guarantee that the message can be delivered to the given address.

3.8.2 *Expected answerback comparison*

Subscribers may provide all or part of the expected answerback to enable the unit to validate the answerback received in order to provide message security. If the subscriber does not provide the expected answerback, then the SFU may provide validation by comparing the called party's number with the received answerback. If an invalid destination answerback is received by the SFU, the message will not be sent. A non-delivery notification will be given to the sending subscriber including the service code IAB and optionally repeating the destination answerback actually received. The method used for checking the answerback is the responsibility of the Administration offering the store and forward service.

3.9 *Advice of non-delivery/delivery*

3.9.1 Automatic advice of non-delivery should be given to the subscriber as soon as the message retry cycle has been terminated. In the case of multi-address messages, advice of non-delivery may be issued on a per message or per address basis, the former being preferred when the retry cycle has been completed for all of the specified addresses. If an advice of non-delivery cannot be delivered, then it should be sent to a manual assistance position associated with the SFU. Normal telex operator calling procedures must be observed when attempting manually-assisted advice of non-delivery.

3.9.2 Automatic advice of delivery is preferred. However, it will be provided at the discretion of the Administrations offering the SFU service.

3.9.3 In the case of interconnected store and forward, the destination SFU should pass all delivery, non-delivery and status information to the originating SFU from which advice will be sent to the subscriber.

3.9.4 The provision of a periodic (e.g. daily) notification or journal may be considered as an adequate form of delivery, non-delivery and status information.

3.10 *Message status enquiry point*

3.10.1 A message status enquiry point should be provided internationally to provide information only in response to a status request from the originator. This message status enquiry point will be accessed by a separate access code to that used for message input.

3.10.2 When the SFU provides automatic advice of delivery and non-delivery, or a request for positive delivery can be indicated, then the provision of status enquiry facilities is optional.

3.10.3 Status enquiry information should be maintained preferably for 72 hours.

3.11 *Call records*

Records of effective and ineffective calls along with the number of each in the case of multi-address should be maintained and forwarded to the origin Administration at regular intervals (at least once per month) for general accounting, billing and statistical purposes. The Administrations must agree bilaterally on the format and method of information transfer.

3.12 *Incomplete message*

If there is any doubt as to whether a message has been delivered completely and it is to be re-sent, the header "Possible duplicate message" should be added.

4 **Facilities**

4.1 *Single address*

This is where a store and forward message is sent to a single telex or teletex addressee and is considered to be a minimum requirement. Delivery to other type of address(es) is for further study.

4.2 *Multi-address*

4.2.1 A multi-address message is where a common text is sent to two or more mixed telex or teletex addresses. This facility should be provided only for addresses in the same country as the destination SFU and requires bilateral agreement.

4.2.2 The acceptable number of individual addresses for any one message will be decided by the Administrations operating the SFU but should be at least 20.

4.2.3 If the maximum acceptable number of addresses is exceeded, the SFU shall clear the communication after sending the service code TMA.

4.3 *Follow-on messages*

This facility enables the subscriber to enter more than one message into storage without clearing, each message being preceded by a different header, and is considered to be highly desirable. At the completion of the transaction, the unit should advise the sender of the number of messages received. Each separate message must have a unique reference number.

4.4 *Classes of delivery*

The following three classes of delivery have been identified; one or more of these should be offered by Administrations:

- a) Normal delivery – the SFU attempts to deliver the message as soon as operationally feasible after receipt.
- b) Deferred delivery – the delay can be either:
 - i) set by the Administration offering the SFU facility;
 - ii) set by the calling subscriber, such that the delivery of the message is not attempted until after the expiration of the indicated delay.
- c) Time limited delivery – where the SFU attempts to deliver the message as soon as operationally feasible up to a customer – specified time limit not exceeding 24 hours.

These classes of delivery should be offered on a per address basis.

4.5 *Cancellation*

The facility whereby the sending subscriber may cancel a message after it has been accepted by the SFU is not permitted.

4.6 *Address correction*

The facility whereby the subscriber can correct an address during input is desirable and may be provided.

5 Quality of service

5.1 *Loss probability in the store and forward procedure*

5.1.1 The introduction of an SFU into the telex network should not increase, on a per address basis, the probability of message loss or corruption.

5.1.2 In international store and forward, the unique identification of each message should enable the system to provide information as to the status of any message upon interrogation.

5.1.3 In the event of system failure, all accepted messages should be traceable. However, if messages have to be cancelled, the subscriber should be informed.

5.2 *Error protection*

The overall error protection should be in accordance with Recommendation F.10 and the error rate should not therefore be greater than 3 in 100 000.

5.3 *Duration of service*

The automatic service should be continuous.

5.4 *Number of circuits*

Where international store and forward exists, the amount of traffic generated and received by the SFU should be considered when determining the number of international circuits in conformity with Recommendation F.64. However, the actual number of circuits will depend on the capacity of the SFU. Care must be taken that routes are not congested by the SFU. Such factors as the time difference between the countries concerned need to be taken into account.

5.5 *Minimum storage capacity*

The storage capacity will vary from unit to unit according to the volume of traffic. However, it should be sufficient to provide a grade of service not less than that of the international telex service provided by that Administration.

6 Access principles

6.1 The procedure defined in this part of the Recommendation is a two-stage selection procedure whereby the calling telex subscriber gains access to a foreign SFU in the first stage of selection and *either* inputs the called address(es) and message, *or* requests a status report, in the second stage of selection, after the return of a call-connected signal.

6.2 Message input from both manual and automatic emitting devices should be accommodated.

6.3 The calling address for calling subscribers with non-F.60 answerback codes should be obtained to enable identification of the calling subscriber.

6.4 A different access code should be used depending on the desired mode of operation; either message input or status enquiry.

7 Access procedures

7.1 *General*

7.1.1 Two basic access procedures should be provided:

- a) Interactive operation — input from manual calling terminals, where the SFU may return prompt signals;
- b) Non-interactive operation — either input from automatic emitting devices or from subscribers' terminals, where prompt signals from the SFU are not required or are input from another SFU (detection of this type of access will rely on the identification of the calling SFU answerback).

7.2 *Telex access*

7.2.1 The calling telex subscriber should establish a call to the SFU by means of normal telex procedures.

7.2.2 Figure 1/F.72 shows the recommended access procedures.

7.3 *Service request*

7.3.1 *Interactive service request*

The calling telex subscriber shall be recognized as interactive by the omission of the non-interactive service request (see § 7.3.2).

7.3.2 *Non-interactive service request*

The calling telex subscriber should indicate that the transmission is from an automatic terminal by commencing the procedure with the non-interactive service request (characters **CI**).

7.4 *Message input*

7.4.1 Provision should be made for both single and multi-addressed calls.

7.4.2 The SFU should only accept messages for delivery to destination addresses served by that SFU.

7.4.3 An attention information field may be provided by the SFU to convey the name and address of the recipient in a confidential manner.

7.4.4 The desired class of delivery should be selectable on a destination address basis.

7.4.5 A message reference number may be returned to the calling subscriber immediately after the date and time information and before message input. In addition, it must be returned after the **ITD** signal at the end of the transaction. The reference number should comprise up to six numeric characters and cycle through consecutively for follow-on messages within the same transaction with accommodation being made for at least the last two or three digits for this purpose.

7.4.6 Characters received in the message text (but with exception of letter D, figure case) should be transmitted transparently by SFU.

7.4.7 An input transaction accepted for delivery (**ITD**) service code should be returned to the calling subscriber to indicate that the SFU has accepted the message on receipt of the **EOT** or **EOM(ACK)** signal.

8 **Information field content for address line**

8.1 *Message input address line*

8.1.1 Each address to which it is required to attempt to deliver the message should be provided by the customer in the address line.

8.1.2 The address line information may consist of up to 4 fields:

- a) address to be called;
- b) expected answerback or part of answerback;
- c) attention information;
- d) delivery indication;
- e) positive delivery notification (PDN) request.

8.1.3 Each field within an address line and also each address line should be delimited.

8.1.4 All fields within an address line except for § 8.1.2 a) are optional and may be omitted at the discretion of the customer.

8.1.5 The address line(s) should be delimited from the message text by an end of address (**EOA**) signal.

8.1.6 Teletex address input shall be:

- a) where a one-stage CF (conversion facility) is implemented: F.69 code, CF prefix, and teletex national number;
- b) where a two-stage CF is implemented: TTX character sequence, followed by the data network identification code (DNIC) or 9 + TCC (where 9 is the telephone network interworking digit and TCC is the telephone country code, see Recommendation X.121), and the telex national number.

9 SFU access protocol

This section is to be read in combination with Recommendation U.80.

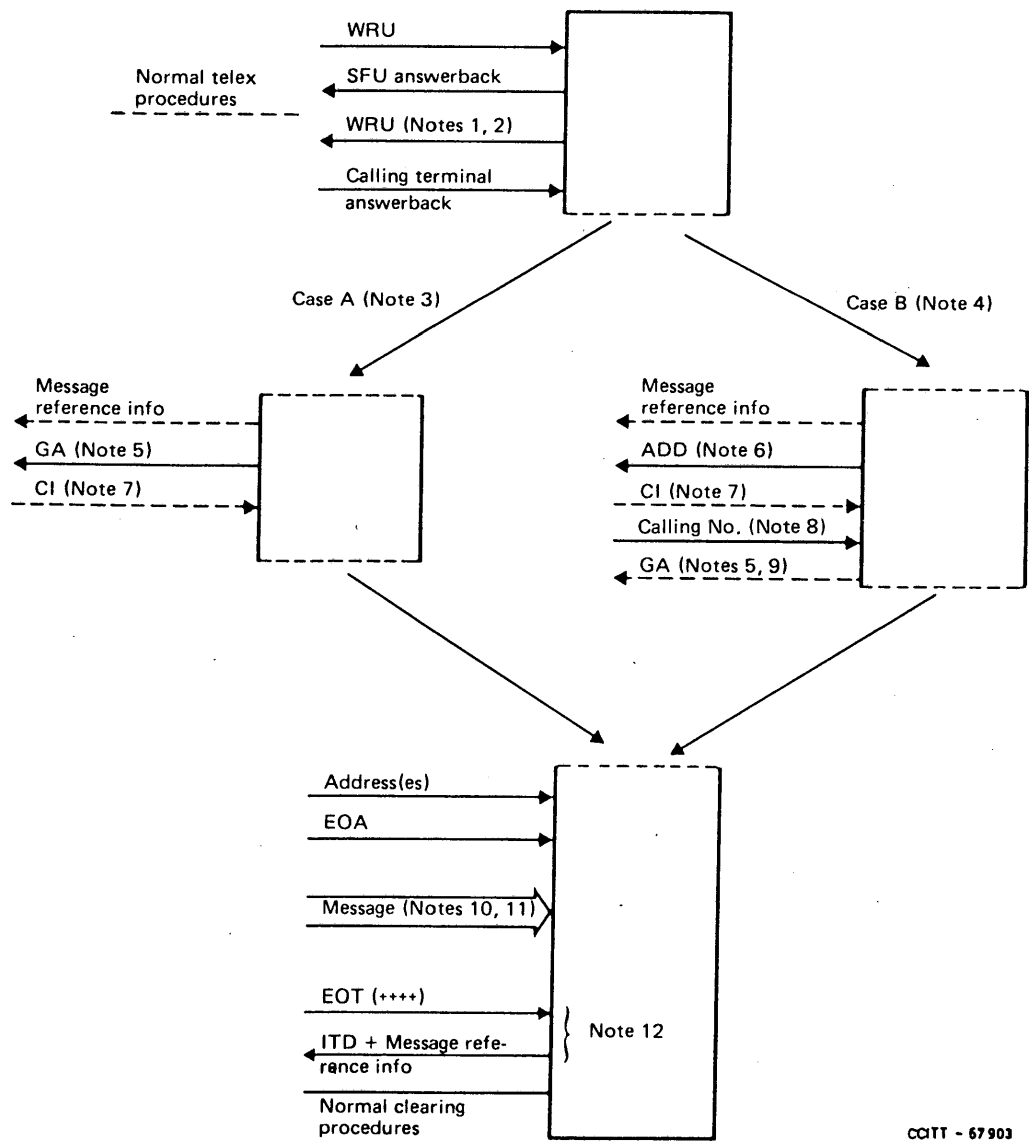


FIGURE 1/F.72
SFU access protocol

9.1 *Note 1*

The WRU is transmitted 800 ms after transmission of the SFU answerback if the forward path remains idle.

9.2 *Note 2*

One additional WRU shall be transmitted by the SFU if:

- a) there was no response to the first WRU;
- b) signals were received after the first WRU which could not be identified as an answerback.

This second WRU should be transmitted when a 300 ms idle condition has been detected from the calling terminal at least 10 seconds after the transmission of the first WRU.

9.3 *Note 3 – Case A*

Procedure when calling address can be determined from the calling terminal answerback.

9.4 *Note 4 – Case B*

Procedure when calling address cannot be determined from the calling terminal answerback.

9.5 *Note 5*

In Case A, the prompt GA shall be transmitted after the message reference information. In Case B, the prompt GA shall be transmitted after receipt of the calling number.

9.6 *Note 6*

The prompt ADD is used in Case B only and shall be transmitted after the message reference number.

9.7 *Note 7*

The service request CI is transmitted when the terminal is operating in a non-interactive mode (e.g. an automatic terminal or a manual terminal using a tape transmitter).

9.8 *Note 8*

If the calling address is expected and is not received within 15 seconds of the original ADD prompt, a further prompt shall be transmitted. The procedure is shown in Figure 2/F.72.

The calling address should be input in the Recommendation F.69 destination code format followed by national telex number followed by at least two carriage return line feed sequences when received in the non-interactive mode.

9.9 *Note 9*

The prompt GA is inhibited in Case B if the service request CI has been received.

9.10 *Note 10*

Several messages can be contained within the same transaction and are separated by EOM sequences, as shown in Figure 3/F.72.

9.11 *Note 11*

The EOM signal may optionally be followed directly by an ACK request signal. The sequence will then be as shown in Figure 4/F.72.

Immediately following transmission of an IMA, the SFU shall return reference information containing reference numbers for previous unacknowledged messages and the signal $\leq \equiv \downarrow$ GA $\leq \equiv$ and then be prepared to accept further follow-on messages.

9.12 *Note 12*

Following receipt of the EOT signal, the SFU shall operate as shown in Figure 5/F.72:

- a) If the EOT signal originated from a non-interactive telex terminal, the SFU should wait for up to two seconds for a WRU signal. If WRU is received, the SFU should return its answerback followed immediately by the ITD sequence. If WRU is not received in the two-second period, the SFU should return the ITD sequence.
- b) If the EOT signal originated from an interactive telex terminal, the SFU should return the ITD sequence as soon as possible.
- c) The ITD signal and associated reference information must be returned within five seconds of the EOT signal.

9.13 *Note 13*

If a WRU signal is received at any time during the procedure, the SFU shall return its own answerback.

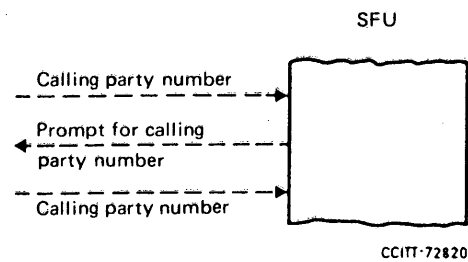


FIGURE 2/F.72

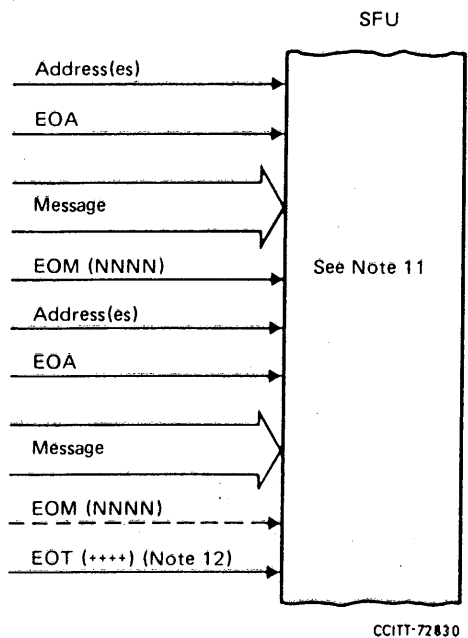


FIGURE 3/F.72

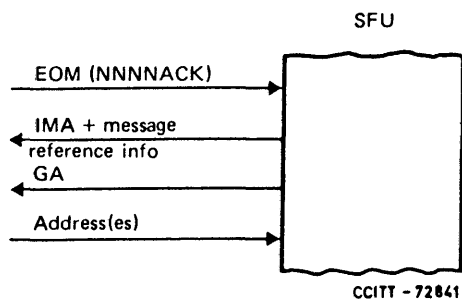


FIGURE 4/F.72

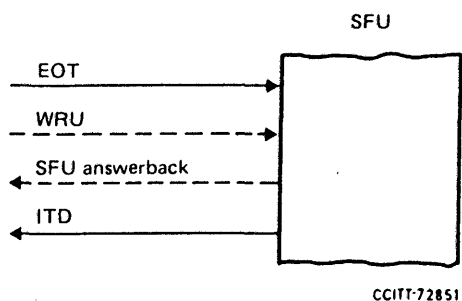


FIGURE 5/F.72

10 Abnormal conditions during message input

10.1 Telex subscriber clearing during text input without EOT

The SFU either cancels the call or sends it to an operator assistance position.

10.2 Telex subscriber stopping transmission for a certain time without transmitting the EOT signal, or transmitting a partial, or invalid EOT signal

If at any time between the SFU returning the GA prompt (Case A) or calling address prompt (Case B) and the detection of the EOT signal, the SFU detects a 30-second period of idle, the following should apply:

The SFU shall send a GA prompt to the telex subscriber in order to request more information input (text, EOM or EOT). If after a further 30 seconds no more characters are received, the SFU shall either:

- send the BMC service code and clear the call (if the SFU cancels incomplete messages); or,
- clear the call (if the SFU sends the message to an operator assistance position).

10.3 Telex subscriber sending WRU to SFU during text input

The SFU should return its answerback after receiving a WRU. In addition, if:

- WRU is followed by text, then the message input is continued after the SFU answerback. Also, the WRU is deleted from the message text.
- WRU is followed by a clear from telex, then the SFU proceeds as in § 10.1 above.
- WRU is followed by a lack of transmission (pause), then the SFU proceeds as in § 10.2 above.

10.4 *Telex subscriber sending text after the EOT signal*

Any characters received between EOT and ITD service code (with the exception of WRU) will be ignored. The SFU shall use a sequence of TTT ... characters to stop telex transmission and then send an ITD code followed by a clearing signal. After clearing, message is forwarded to the telex subscriber(s).

10.5 *Telex subscriber clearing after EOT but before ITD*

The message shall be forwarded normally by the SFU under these circumstances.

10.6 *Telex subscriber sending national variants of ITA No. 2 alphabet – (↑F, ↑G, ↑H)*

Since Recommendation F.60, § A.3.8 recommends that these combinations should not be used for international communications, the SFU should not monitor for their use and these combinations will be passed on to the called subscribers if received.

10.7 *Telex subscriber sending J Bell combination (↑J)*

The SFU should transmit this combination, if received, to the called party.

10.8 *SFU storage capacity overflow during telex message input*

10.8.1 If the number of characters received by the SFU during a message input exceeds the available storage to that input (which may be greater than the agreed minimum storage), the SFU should discard the excess characters. No attempt should be made by the SFU to overwrite previously stored characters.

10.8.2 When this occurs, the SFU should immediately attempt to prevent the calling telex subscriber from sending further characters by transmitting a sequence of TTT... characters for a maximum of 20 seconds.

10.8.3 If the calling terminal stops the transmission within a 20-second period, the SFU should return the service code LDE and then wait for the EOT or EOM(ACK) in accordance with § 3.6. If the EOM signal is received without ACK, the message shall be rejected as incomplete.

10.8.4 If the terminal continues to transmit characters after the 20-second period, the SFU should forcefully clear the connection back to the calling terminal.

10.8.5 The SFU should deal with the incomplete message(s) in accordance with § 3.6.

10.8.6 If the SFU has insufficient storage to receive messages, it should still continue to process status enquiry requests.

10.9 *Repeated characters during message input*

The SFU shall be capable of detecting continuous reception of one character combination and shall recognize this as a "tape stuck" condition. The SFU shall detect this condition only after receipt of 80 identical combinations received consecutively. The SFU shall attempt to signal the calling terminal by transmitting a sequence of TTT... characters for a maximum of 20 seconds. If the character combinations become different, the SFU shall continue with the message input and deliver all characters received. If the "tape stuck" condition remains at the end of 20 seconds, the SFU shall clear the connection and follow the procedure outlined in § 3.6.

11 **Status enquiry**

11.1 Status information on messages should only be available for return to the originator of the message. In all cases the answerback should be used for identification and therefore needs to be retained.

11.1.1 In the case of multi-address messages, status information may be requested on:

- a) all addresses associated with a message reference number;
- b) addresses which have not yet received the message;
- c) addresses specified by the customer.

11.2 *Status enquiry information field content*

11.2.1 The status enquiry should contain the following fields:

- a) message reference information;
- b) a status request;
- c) address(es).

11.2.2 The status request indicates the information required (see § 11.2.1).

11.2.3 The address(es) field, see § 8.1.2 a), should only be included when status information has been requested for specific addresses.

11.3 *The status report*

11.3.1 The status report format will be consistent with the notification advice format.

11.3.2 Two types of status report are returned:

- a) delivered;
- b) not delivered.

11.4 *Status report field content*

11.4.1 The status report should contain the following fields where applicable for each address:

- a) message reference number;
- b) selection information;
- c) expected answerback;
- d) notification, i.e. not delivered or delivered;
- e) received answerback;
- f) reason for non-delivery;
- g) date and time of delivery;
- h) duration of call.

11.4.2 The information contained in fields e), g) and h) will only be included in a delivery notification whilst the information in field f) will only be included in a non-delivery notification.

11.4.3 The information contained in field f) should indicate to the subscriber the reason why the SFU has been unable to deliver the message to the address detailed in field b). This information should describe the reason for failure on the latest or final attempt.

11.4.3.1 When a service signal is received by the SFU, this information shall be placed in the reason field. The service signals are:

OCC, NC, ABS, NA, NP, NCH, DER, RDI.

11.4.3.2 Other reasons for delivery failure are:

- a) wrong answerback received from destination.
The reason field content should be IAB (see § 3.2.2).
- b) premature clear of call during message transmission.
The reason field content should be PREM CLR.
- c) interruption of message transmission caused by receipt of characters at the SFU.
The reason field content should be INTERRUPTED.
- d) address validation failure, the reason field content should be REJ.

12 **Delivery procedure**

This section shall be read in combination with Recommendation U.81.

12.1 §§ 12, 13 and 14 outline procedures for the delivery of international telex messages by an SFU and comprise the following:

- a) message forwarding procedures;
- b) notification procedures;
- c) delivery retry procedures.

12.2 The procedures should apply to all classes of message delivery.

12.3 The priority and time of message delivery should be the responsibility of the SFU that has accepted the input message for delivery.

12.4 In the case of international interworking between the SFUs, the priority and time of message delivery may be controlled by the originating or destination SFU subject to bilateral agreement between the Administrations concerned.

12.5 The term “delivery of messages” applies to the forwarding of messages, which were input into an SFU by an originating telex subscriber, to a telex subscriber over the telex network.

12.6 The term “notification” applies to the forwarding of an advice of delivery/non-delivery of a message to the originating telex subscriber over an international telex circuit.

12.7 *Telex message forwarding procedures*

12.7.1 The sequence of the message forwarding procedure components are illustrated in Figures 6/F.72 and 7/F.72.

12.8 The components of message forwarding procedures are as follows:

12.8.1 *Call set-up*

- a) Establishment of a connection by an SFU over the telex network should use normal telex procedures. If a call-connect signal is not received, the call attempt should be terminated and a retry made in accordance with § 3.2.1.
- b) If service codes are received during the call set-up cycle, the SFU should act in accordance with § 3.2.
- c) Messages should be considered non-deliverable if the service code NCH or RDI is received during the call set-up cycle.

12.8.2 *Called subscriber answerback validation*

12.8.2.1 To ensure security of delivery, the answerback of the called subscriber should be compared with the anticipated answerback of the called subscriber, if supplied by the originating telex subscriber.

12.8.2.2 One erroneous character displacement shall be tolerated in the validation process of the called subscriber's answerback.

12.8.3 *Store and forward unit identification*

The SFU identification should consist of:

- a) the service code CI;
- b) an indication that the message is from an SFU;
- c) the date and time of transmission (optional).

12.8.4 *Message identification*

The SFU shall transmit to the called subscriber a message identification sequence issued at the time of input of the message in accordance with § 3.1.

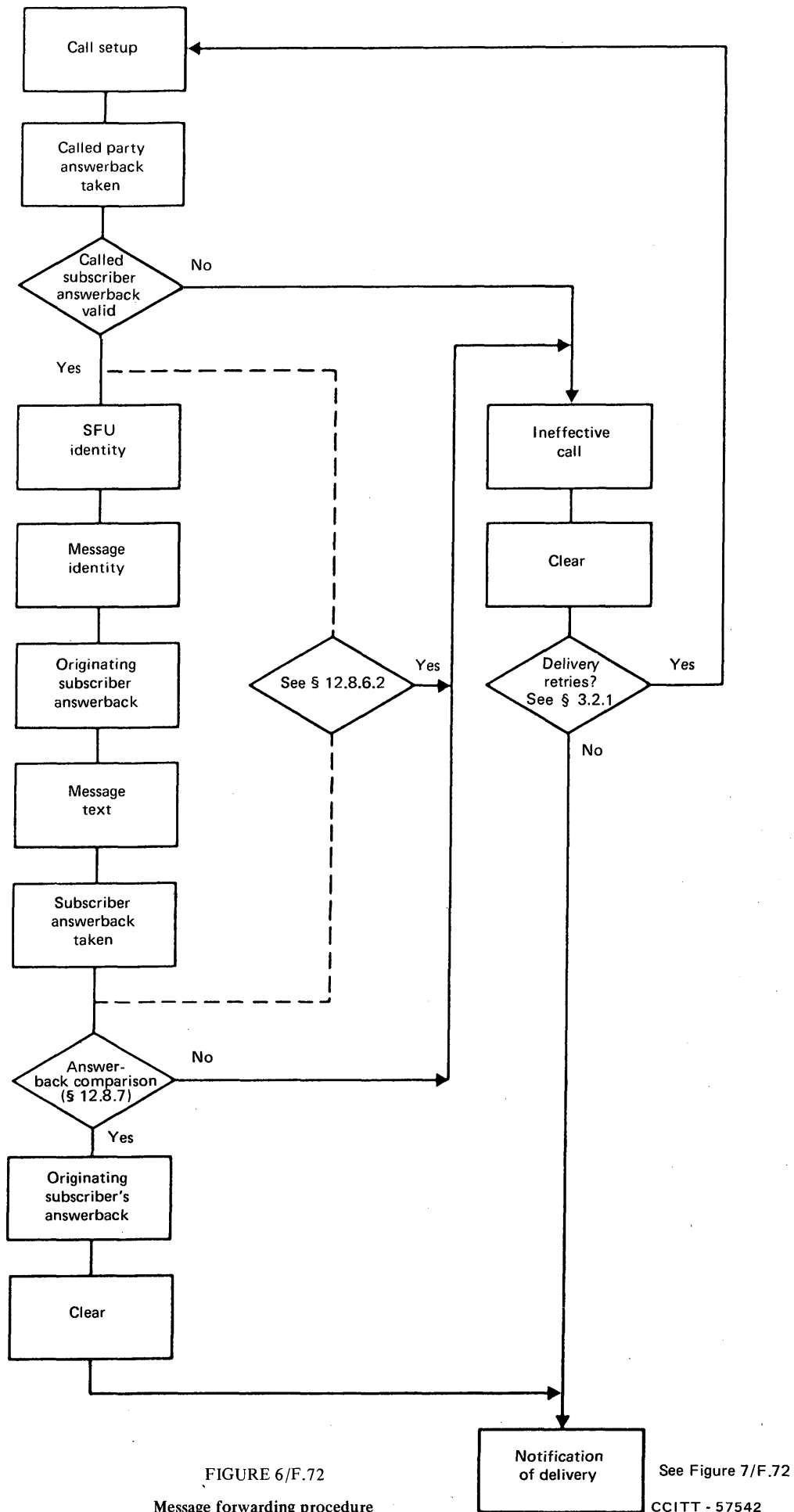
12.8.5 *Answerback of originating telex subscriber*

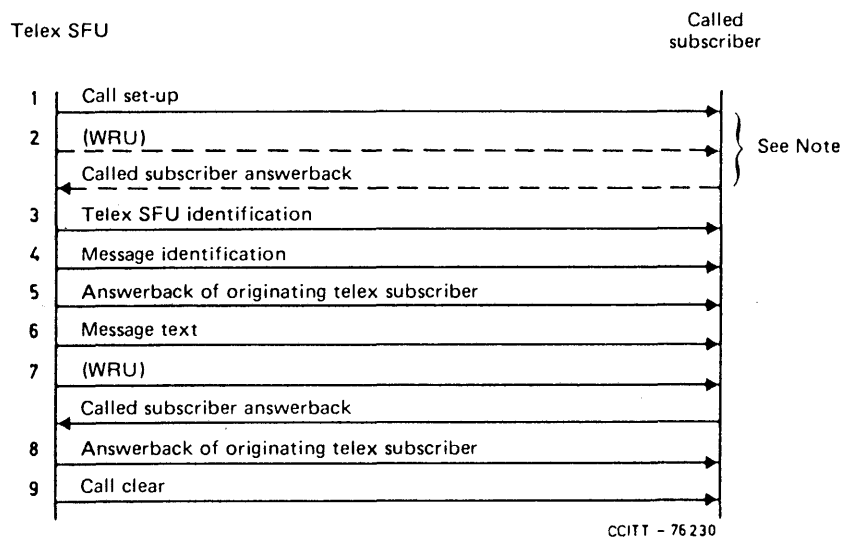
The answerback of the originating subscriber shall then be sent to the called subscriber.

12.8.6 *Message text*

12.8.6.1 The SFU should transmit to the called subscriber any message header information together with the stored message in the format in which it was originated by the calling subscriber. The EOM/EOT separators and the ITA No. 2 sequence WRU shall not be transmitted.

12.8.6.2 If any signal is received on the backward path during the message text delivery, transmission of the message text shall be stopped for two seconds. If during that time further signals or a clearing condition is received, the call shall be cleared and the message delivery deemed unsuccessful and action taken in accordance with § 3.9 of this Recommendation. If no further signals are seen on the backward path during that time, transmission of the message text shall be resumed.





Note – Optional answerback capture if not available from Step 1.

FIGURE 7/F.72

12.8.7 *Called subscriber answerback comparison*

Following message text transmission, the answerback of the called subscriber shall be taken and compared with that received at the start of message delivery. If there is a match, the delivery of the message shall be deemed successful. In the event of a mismatch of answerbacks, the answerback of the called subscriber shall be taken once again for comparison. If there is a second mismatch, the delivery of the message shall be considered as unsuccessful and further delivery attempts shall be made in accordance with § 14.

12.8.8 *Answerback of originating telex subscriber*

The answerback of the originating subscriber shall then be sent to the called subscriber.

12.8.9 *Call clearing sequence*

The SFU should clear the call using normal telex clearing procedures. However in the case of delivery to a teletex destination, different clearing procedures may apply (details are for further study).

13 **Notification procedures**

13.1 *Types of notification*

The types of notification are shown in § 3.9.

13.2 *Notification delivery procedures*

13.2.1 Status reports should be returned in response to a status request.

13.2.2 All other types of notification should be delivered using the procedure described for telex message forwarding in §§ 12.7 and 12.8.

13.2.3 To ensure security of delivery of the notification, the answerback of the called subscriber should be compared with the answerback taken from the subscriber at the time of message input.

13.2.4 Notification of message delivery/non-delivery may be on a per message or per address basis. This Recommendation assumes that notification will be returned on a per message basis.

14 Delivery retry procedures

14.1 The principles of Recommendation U.40 shall be applied for all delivery/notification retry requirements.

14.2 The action to be taken when a notification cannot be delivered should be the responsibility of the Administration offering the SFU as described in § 3.9.

14.3 If the service code RDI is received during call set-up more than once in any one message delivery/notification attempt cycle, the message shall be considered undeliverable.

14.4 *Recorded message from the called subscriber*

14.4.1 If the recorded message is followed by clear, the message shall be considered undeliverable.

14.4.2 The action to be taken by the SFU if the recorded message is not followed by a clear is for further study.

15 Field content delivery/non-delivery notification

15.1 The delivery/non-delivery notification should contain the same fields as shown for the status report in § 11.4.1.

16 Special provisions for interconnected telex store and forward

16.1 *Service outline*

16.1.1 The telex store and forward facility allows a telex subscriber to deposit single or multi-address messages with an SFU for subsequent delivery to the specified address or addresses.

16.1.2 In the event of a failure to deliver to any address or addresses, a non-delivery notification is issued to the originating telex subscriber. The requirement to send a non-delivery notification is mandatory. Transmission of non-delivery notifications may occur on a per address or per multi-address basis.

16.1.3 A delivery notification for successful delivery and/or subscriber initiated status enquiry information may also be issued.

16.1.4 The term "network management boundary" refers to the boundary within which the telex store and forward service is provided by one or more telex SFUs under the control of one Administration.

16.2 *International interconnection*

16.2.1 The extension of telex store and forward facilities beyond the management network boundary of an Administration requires cooperation between SFUs across international connections.

16.2.2 In the international interconnection of telex SFUs, the responsibility to deliver single and multi-address messages is transferred from the originating Administration to one or a number of destination Administrations.

16.2.3 In the basic service, messages addressed to more than one destination store and forward management network should be separated at the originating management network.

16.2.4 The possibility of forwarding messages via transit management networks is for further study.

16.2.5 In the international interconnection of telex SFUs it is necessary to return delivery/non-delivery status information to the originating SFU. This information is compiled on a per address basis at the destination SFU when either the message has been delivered or no further attempts to deliver will be made to that address.

16.2.6 The return of delivery and non-delivery advice information to the originating SFU may be on a per message address or per message basis.

16.2.7 When information is issued on a per message basis, the originating SFU may request interim message delivery status reports by transmitting message status requests.

16.2.8 Delivery and non-delivery information provided on a per message address basis requires explicit notification to the originating SFU.

16.2.9 Delivery and non-delivery information provided on a per message basis may only require explicit notification of non-deliveries and implicit notification of deliveries.

16.2.10 The method employed on an international connection between SFUs to transfer delivery/non-delivery status information should be the subject of bilateral agreement. Account must be taken of the means by which the interconnection is established and the possible effects in service.

16.2.11 The storage of messages during the specified period for messages (or addresses) requiring delayed delivery should generally be carried out by the originating SFU. In this case the delay indicator is omitted in the corresponding message to the destination SFU. When the delay action is not carried out in the originating SFU, the appropriate delay indicator should be retained.

16.3 *Elements of inter-SFU message transfer procedure*

16.3.1 The basic element of the inter-SFU message transfer procedure is the message transfer unit. This unit is classified as either a user message transfer unit or service message transfer unit allowing easy identification of the function(s) for which cooperation is required.

16.3.2 User message transfer units carry messages submitted by a telex customer for delivery to a specified address or addresses.

16.3.3 Service message transfer units do not contain telex customer messages but are used to convey service information about messages. There may be two types of such units:

- a) notification (delivery and/or non-delivery);
- b) status (enquiry/report).

Use of other service message transfer units is for further study.

16.3.4 Notification service message transfer units are issued automatically by the SFU. Status service message transfer units are generated as a result of a customer request or in response to a received status service message transfer unit.

16.3.5 There are six types of message transfer units used to provide a telex SFU interworking capability:

- 1) Text transfer – used to transfer address information and the customer message.
- 2) Status request – used to request from a destination telex SFU the present status of message delivery to:
 - i) all addresses;
 - ii) those addresses to which the message has not been delivered;
 - iii) specified addresses.
- 3) Status report – only used in response to a status request.
- 4) Delivery notification – used to provide information on an address or addresses to which the message has been delivered.
- 5) Non-delivery notification – used to provide information on an address or addresses to which the message has not been delivered.
- 6) Combined delivery/non-delivery notification – used to provide information on whether a message has or has not been delivered to a number of addresses.

**OPERATIONAL PRINCIPLES FOR COMMUNICATION BETWEEN
TERMINALS ON TELEX NETWORKS AND DATA TERMINAL EQUIPMENT ON PACKET
SWITCHED PUBLIC DATA NETWORKS**

The CCITT,

considering

- (a) the need to allow communication between terminals on telex networks with terminals on packet switched public data networks;
- (b) that Recommendations F.60, F.69 and other relevant Recommendations define the telex service;
- (c) that Recommendation X.121 defines the international numbering plan for public data networks;

(unanimously) declares the view

(1) that there are benefits in standardizing the operational procedures for a terminal on the telex network to communicate, across international boundaries, with a data terminal equipment (DTE) on a packet switched public data network (PSPDN);

(2) that where provided, the operational procedures to achieve communication should be in accordance with this Recommendation.

1 Introduction

1.1 The procedures defined in this Recommendation enable telex subscribers to communicate with both packet mode and character mode data terminal equipment (DTE) directly connected to the PSPDN. In the other direction users of packet mode and character mode DTEs, as well as character mode terminals accessing the PSPDN via the public switched telephone network (PSTN), may communicate with telex subscribers.

1.2 Call establishment from a telex terminal via a PSPDN to a DTE connected to the PSTN may be provided on a national basis.

1.3 This Recommendation does not supply to other telematic services that may be supported by packet switched public data networks and interworking with the telex service.

For example, interworking between the telex service and the teletex service or the interpersonal messaging service is not within the scope of this Recommendation. Such interworking scenarios are defined in other Recommendations.

1.4 This Recommendation applies to user classes 8-13 and 20-23 as defined in Recommendation X.1. Categories of access for DTEs accessing the PSPDN are shown in Recommendation X.10.

2 Operational outline

2.1 Communication shall be in quasi real-time and support interactive operation. Delays may be encountered as defined in § 4.1.2.

2.2 The interworking shall be established by the provision of a telex/packet interworking function (TPIWF).

Interworking on the international connections should be via the telex network as shown in Figure 1/F.73.

¹⁾ Two Administrations expressed reservations on the adoption of the following sections of this Recommendation: §§ 3.1.2.6, 3.2.3, 3.2.6 and 4.2.3. These will require further study within Question 7/I during the Study Period 1989-1992.

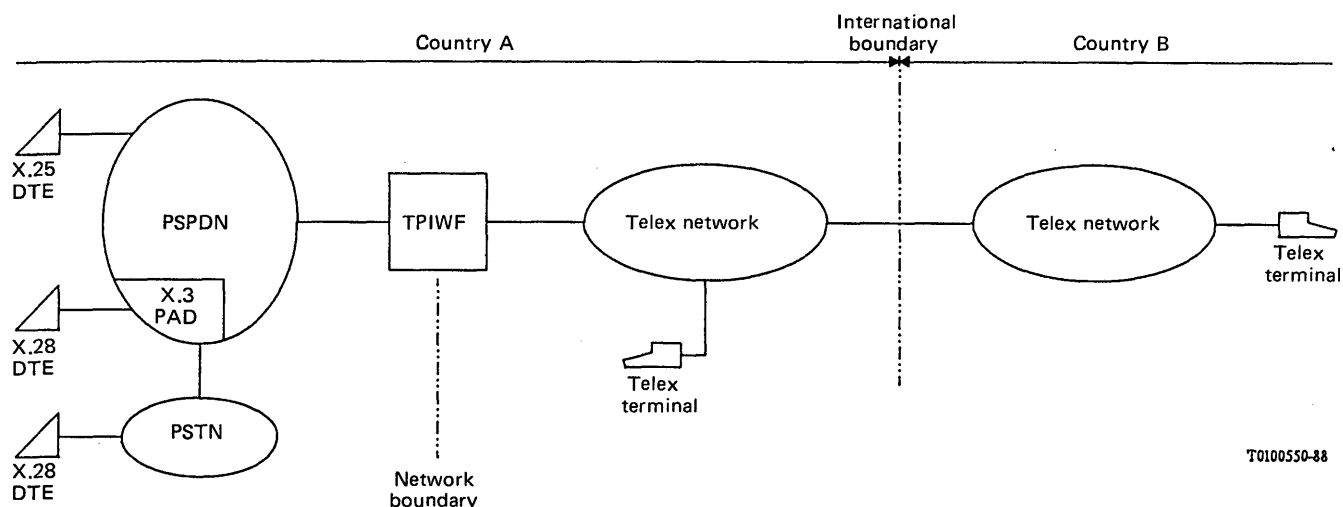


FIGURE 1/F.73

Interworking mode

- 2.3 The point of interworking between the two networks shall be in the same country as the PSPDN.
- 2.4 In the telex to PSPDN direction, an Administration may implement either or both one-stage and two-stage call set-up procedures.
- 2.5 Where the DTE is assigned a telex number, or its address is represented as part of the national telex numbering plan of the destination country, one-stage selection may be used.
- In all other cases two-stage selection should be used.
- 2.6 Transparent data transfer is not covered by this Recommendation.

3 Call set-up procedures

3.1 Telex to PSPDN direction

3.1.1 One-stage selection

3.1.1.1 The length of the number assigned to the DTE shall be in accordance with the relevant U-Series signalling Recommendations.

3.1.1.2 The procedures for selection within the PSPDN, e.g. mapping of the assigned number to a network user address are a national matter and not covered by this Recommendation.

3.1.1.3 The call to the TPIWF shall be established using normal telex procedures. The procedures for call establishment within the PSPDN are defined in the relevant X-Series Recommendations.

3.1.1.4 The number assigned to a user in the TPIWF must appear to be part of the national telex numbering plan. The method of verification is a national matter.

- Where the TPIWF is provided by the Administration which also provides all or part of the telex network, the service signal NP may be returned.
- Where the TPIWF is not provided by the Administration which provides all or part of the telex network, the procedures to be applied shall be in accordance with the Recommendation F.74.

3.1.1.5 The answerback returned by the TPIWF to the calling telex subscriber at call establishment and during the text transfer phase shall be in accordance with § 4.3.1.1. The answerback shall be returned in accordance with Recommendation S.6.

3.1.2 *Two-stage selection*

3.1.2.1 In the case of two-stage selection a national telex number should be assigned to the telex/packet interworking function (TPIWF), and the DTE X.121 address should be input in a second stage of selection.

3.1.2.2 Connection to the TPIWF shall be established using normal telex procedures.

3.1.2.3 During the first stage of telex call establishment and until the call connect packet is received, the answerback returned in response to the WRU signal shall be the answerback of the TPIWF.

3.1.2.4 The format of the TPIWF answerback shall be in accordance with Figure 2/F.73.

3.1.2.5 After the answerback exchange, the telex subscriber shall input the DTE address followed by the character +.

3.1.2.6 When the call is established through the PSPDN by the TPIWF it shall transmit the identification of the DTE re-arranged as shown in Figure 3/F.73.

3.1.2.7 The provision for automatic terminals [telex automatic emitting devices (TAEDs)] is for further study.

3.1.2.8 The procedures for call establishment in the PSPDN are a national matter and not covered by this Recommendation.

3.1.2.9 If during the PSPDN call establishment phase, one of the following occurs:

- no logical channel available;
- no call connect packet received within 3 minutes; or
- call collision,

the telex call shall be cleared with the appropriate service signal.

3.2 *PSPDN to telex direction*

3.2.1 Selection procedures from the PSPDN DTE to the TPIWF are a national matter. The TPIWF should establish the telex call using normal telex procedures with telex selection information provided by the calling DTE.

3.2.2 Where an Administration provides one-stage selection in accordance with § 3.1.1 of this Recommendation, only DTEs assigned a telex number are permitted to establish a telex call. The method of verification is a national matter.

3.2.3 The TPIWF shall store the identification of the calling DTE for the duration of the call in order to generate an answerback if requested by the called telex terminal. The format of the answerback is as defined in § 4.3.1.1 or Figure 3/F.73 as appropriate.

3.2.4 After a successful call establishment to the telex terminal the TPIWF should indicate call connect to the PSPDN.

3.2.5 If a call is unsuccessful the TPIWF shall clear the call to the DTE with an appropriate cause code reflecting the received telex service signal. The appropriate cause code is a national matter but may be selected from Recommendation X.96.

3.2.6 The TPIWF shall transmit the answerback of the called telex terminal to the calling DTE following the indication of call connect.

3.2.7 Upon receipt of the answerback of the called telex terminal the TPIWF should transmit the answerback of the calling DTE to the called telex terminal as defined in § 4.3.1.1 or Figure 3/F.73 as appropriate.

4 **Text transfer phase**

4.1 *Telex to packet*

4.1.1 Telex characters shall be converted from ITA2 to IA5 in accordance with Recommendation S.18, and transmitted sequentially in data packets. The conversion from ITA2 to other character sets is a national matter.

4.1.2 Characters received from the telex network may be packetized by the TPIWF and forwarded to the PSPDN subject to the following criteria:

- a) when a packet reaches its national maximum size;
- b) no reception of a character from the telex network for a maximum of 10 seconds;
- c) on receipt of a CR character. Where the character combination CR, LF is received they should be included in the same packet if possible;
- d) on receipt of the WRU signal;
- e) + sign received.

The WRU signal should be processed as in § 4.3 and not converted or forwarded.

4.1.3 When flow control prevents the forwarding of further data packets, the TPIWF should store the incoming data from the calling telex terminal. When the limit of storage is reached the procedure to be adopted should be in accordance with Recommendation U.45.

4.2 *Packet to telex*

4.2.1 The user data received from the DTE by the TPIWF shall be transmitted to the telex subscriber.

4.2.2 The TPIWF shall convert the IA5 characters to ITA2 characters, in accordance with Recommendation S.18, and transmit them to the telex network. The conversion from other character sets to ITA2 is a national matter. The CR, LF sequence of characters shall be inserted after any sequence of 69 spacing characters without a CR character. A LF character shall be inserted where only a CR character is received.

4.2.3 If signals are received on the backward path during transmission to the telex terminal, the TPIWF shall disconnect the call in both directions with an appropriate cause code to the DTE.

4.2.4 The procedures for flow control and acknowledgement of the receipt of each data packet is a national matter, e.g a Receiver Ready packet may be sent when all the contents of a data packet have been transmitted successfully to the telex network.

4.2.5 The action to be taken by the TPIWF upon receipt of a “break” from the telex network or the PSPDN is a national matter. The preferred action is for the TPIWF to clear the call.

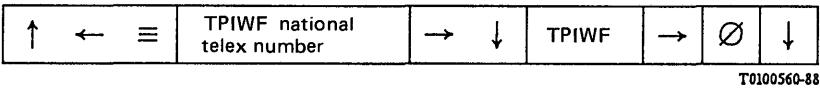
4.2.6 When the TPIWF issues or receives a Reset packet all current data associated with that call should be discarded. The TPIWF shall disconnect the call in both directions.

4.3 *Answerback formats and WRU processing*

4.3.1 *Answerback formats*

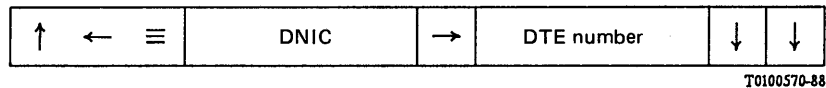
4.3.1.1 The DTE answerback format in case of one-stage selection shall be in accordance with Figure 1/F.74.

4.3.1.2 In the case of two-stage selection the format of the answerback of the TPIWF should be in accordance with Figure 2/F.73 and the DTE identification in accordance with Figure 3/F.73.



Note – If necessary reduce the mnemonic part of TPIWF.

FIGURE 2/F.73



Note 1 – The DNIC consists of up to 4 digits (see Recommendation X.121).

Note 2 – The DTE number consists of up to 11 digits. The total number of digits of the DNIC and the DTE number cannot exceed 14 digits (see Recommendation X.121).

Note 3 – The total DTE identification shall consist of 20 characters. Unfilled positions shall be filled with letter shifts at the end of the identification.

FIGURE 3/F.73

Legend for Figures 2/F.73 and 3/F.73:

- | | |
|--|---|
| <p>↑ is a figure shift</p> <p>← is a carriage return</p> <p>≡ is a line feed</p> | <p>↓ is a letter shift</p> <p>→ is a space</p> <p>∅ is the telex network identification code in accordance with Recommendation F.69</p> |
|--|---|

4.3.2 WRU processing

4.3.2.1 If a WRU signal is received from the telex terminal during the text transfer phase, the TPIWF shall transmit the answerback/DTE identification as defined in § 4.3.1.1 or Figure 3/F.73 as appropriate, to the telex terminal. This answerback DTE identification shall be returned only when all outstanding data has been transmitted to the PSPDN.

4.3.2.2 The DTE may verify connection to the correct telex terminal by use of the IA5 character ENQ as part of a data packet. This should be converted to the ITA2 WRU signal, and transmitted to the telex terminal to trigger the answerback.

The TPIWF shall forward all outstanding data to the telex terminal before transmission of the WRU signal. The first 20 characters received from the telex subscriber after transmission of the WRU signal should be considered to be the answerback which should then be returned to the DTE.

4.3.2.3 The TPIWF should transmit the answerback to the DTE immediately after its reception.

If no character is received within 2 seconds following transmission of the WRU signal, the TPIWF should continue with text transmission.

4.3.2.4 The responsibility for the action to be taken where an answerback is not returned in response to the IA5 ENQ character from the DTE rests with the DTE.

4.3.2.5 The DTE on the PSPDN may also cause the TPIWF to send its answerback to the telex network by sending an IA5 ACK character. The answerback should not be forwarded until all outstanding data packets have been transmitted to the telex terminal.

4.4 Call clearing

4.4.1 Initiated by the PSPDN

4.4.1.1 The preferred method for clearing by the DTE and the TPIWF is the use of the “invitation to clear” procedure according to Recommendation X.29. Any other method of clearing may result in the loss of some data. If, however, the TPIWF receives a Clear Request packet, it should continue transmission to the telex terminal until all outstanding acknowledged data packets have been sent. It should then clear the call in both directions.

4.4.1.2 Whenever the TPIWF receives a Clear Request packet during telex input or the “invitation to clear” procedure in accordance with Recommendation X.29, it should clear the connection in both directions.

4.4.1.3 Where a clear Request packet is received during call set-up in the direction telex-to-packet an appropriate service signal should be sent to the telex terminal. The service signal shall be followed by call clearing.

4.4.2 *Initiated by the telex network*

4.4.2.1 When the TPIWF receives a call clearing signal initiated by the telex terminal during the connected phase of the call, the TPIWF shall initiate the clearing procedure on the PSPDN side, in accordance with the national requirements of the PSPDN.

4.4.2.2 When the TPIWF receives a call signal clearing signal from the telex network during text transmission to the telex terminal, the TPIWF shall clear the call to the DTE with an appropriate cause code (see § 3.2.5) and discard all data not transmitted.

4.4.3 *Abnormal conditions*

The action to be taken when abnormal conditions occur shall be in accordance with the relevant U-Series Recommendations.

Recommendation F.74

OPERATIONAL PROVISIONS RELATING TO MAILBOX DEVICES CONNECTED TO THE TELEX NETWORK

The CCITT,

considering

(a) that there is an increasing trend for mailbox devices to be connected directly to the Telex network, with the ability to send and receive telex messages;

(b) that in some instances, such individual mailboxes are allocated telex numbers;

(c) that the main difference between a dedicated telex terminal and a mailbox device for the purpose of this Recommendation, is that the individual mailbox owner has the responsibility of checking that a message has been received in the mailbox;

(d) that the message could remain in the mailbox unnoticed for some time;

(e) that the sender of the message may be unaware that the addressee is a mailbox, and therefore could reasonably assume that, providing the answerback is present and correct at both start and end of the local record, the recipient will receive the message without any positive action on the part of the recipient;

(f) that such mailbox devices should be required to answer all calls delivered correctly by the telex network, and do so promptly to ensure that ineffective usage of the international telex network is minimised.

unanimously declares

that the general principles, answerback format and time to answer for mailboxes connected to the network should be as described in this Recommendation.

1 Scope

The provisions of this Recommendation apply to mailbox devices connected to the telex network which are identified by a national telex number. This Recommendation recognizes that currently implemented mailbox devices are not required to conform to these provisions. However, where possible there may be advantages if existing equipment comply with the requirements of this Recommendation.

2 Call establishment to a mailbox device

2.1 Incoming telex calls should be answered, provided that the telex number has been correctly selected, and the call passed to the equipment of the customer (the mailbox device).

2.2 The mailbox device shall respond to an incoming call from the telex network by returning the call connected signal in accordance with the relevant U-Series Recommendations, the mailbox answerback being returned in response to the WRU signal in accordance with Recommendation S.6.

2.3 Where the selection information identifies a valid mailbox, an answerback shown in Figure 1/F.74 should be returned together with the code expression CI (Conversation Impossible).

2.4 In order to comply with the requirement of § 2.1, where the call has been passed to the mailbox device but a valid individual mailbox cannot be identified, then an overflow answerback of the form shown in Figure 2/F.74 should be returned. In such circumstances, the call may then be cleared backwards with a message provided by the mailbox device or, if required, routed to an assistance position.

2.5 It should be noted that some Administrations participating in the international telex service use combination 22 in the figure case (=) as the initial printing character of the answerback to indicate a bilingual terminal in its default latin mode.

- Figure-shift or (if required by the network) letter-shift;
- Carriage-return;
- Line-feed;
- National telex number of the individual mailbox or (if letter-shift is fitted in the first position) figure-shift followed by the national telex number of the individual mailbox (see Note);
- “=” Combination No. 22;
- Letter-shift;
- Space (optional);
- Letters indicating as explicitly as possible the name of the individual mailbox user;
- Space;
- One or two letters of the telex network identification code listed in Recommendation F.69;
- Letter-shift (if required by the network).

Note – The individual mailbox telex number will consist of a telex number that identifies the mailbox device. The composition and assignment of the individual mailbox telex number is a national matter.

FIGURE 1/F.74

Individual mailbox answerback

- Figure-shift or (if required by the network) letter-shift;
- Carriage -return;
- Line-feed;
- National telex number of the overflow mailbox or (if letter-shift is fitted in the first position) figure-shift followed by the national telex number of the overflow mailbox (see Note);
- “=” Combination No. 22;
- Letter-shift;
- Space (optional);
- Letters O, combination 15;
- Space;
- One or two letters of the telex network identification code listed in Recommendation F.69;
- Letter-shift (if required by the network).

Note – Where the mailbox device is identified by a telex number with digits assigned to an individual mailbox, the overflow mailbox identify shall be zeros (0s), combination 16.

FIGURE 2/F.74

Overflow mailbox answerback

Recommendation F.75

MESSAGE HOLDING SERVICES; INTERCOMMUNICATION BETWEEN THE IPM SERVICE AND THE TELEX SERVICE

This Recommendation is the same as Recommendation F.421. The text appears in Fascicle II.6.

SECTION 7

PHOTOTELEGRAPH SERVICES

Recommendation F.80

OPERATIONAL PROVISIONS FOR PHOTOTELEGRAMS¹⁾

1 Field of application

1.1 These rules apply to phototelegrams in both continental and intercontinental relations (exchanged between public stations or between public stations and private stations). The provisions concerning the exchange of phototelegraph calls between private stations or from private to public stations are embodied in Recommendations F.80 *bis* and D.81.

1.2 The rules governing the method of communication between phototelegraph stations are embodied in Recommendation F.82.

2 General

2.1 Private stations may be authorized by the Administrations concerned to exchange phototelegrams with public stations.

2.2 In both continental and intercontinental relations, private stations communicate directly with public stations providing that the characteristics of their equipment conform with CCITT Recommendations.

2.3 Administrations shall agree upon the working hours of their phototelegraph offices. The hours during which private offices are open shall be fixed by the private organization concerned.

3 Conditions of acceptance

3.1 In order to ensure satisfactory transmission of a phototelegram it is recommended that senders should be advised to avoid the use of the colours blue, lilac, green or yellow, or gilt print, or prints on yellow, red or grey paper, which lack the qualities necessary for good transmission, and to avoid handing in phototelegrams with very weak contrast or inadequate definition.

3.2 If, after the sender has been informed that the general quality of the original phototelegram is not suitable for satisfactory transmission, he insists on handing it in, the phototelegram shall only be accepted at the risk of the sender. In this case the service instruction **RISQUES EXPEDITEUR** shall be included in the preamble.

3.3 Phototelegrams must be rectangular in shape. Each Administration shall decide what is the maximum format capable of being sent in a single transmission by all the machines used by that Administration. However, in relations where equipment is used permitting the single transmission of greater areas, Administrations may authorize larger sizes.

¹⁾ See also Recommendation D.80.

3.4 Phototelegrams of larger dimensions than those admitted in the relation concerned must be divided into parts by the sender. The order of transmission of the parts must be indicated.

3.5 In phototelegraph transmission a strip of the edges of the phototelegram may be lost on two opposite sides of the document to be transmitted. For this reason care should be taken when dividing a phototelegram to see that there is no loss at the separation line. If there is any doubt, the sender may be advised to authorize the division of the phototelegram by the phototelegraph station.

3.6 It may happen that the format of phototelegrams is enlarged or diminished during a phototelegraph transmission, owing to the different characteristics of the sending and receiving equipment. If this is so, however, the phototelegram will be reproduced with the same proportions as the original.

4 Arrangement of the parts of a phototelegram

4.1 Every phototelegram must bear an address. A signature shall be optional. The address and the signature shall form part of the phototelegram to be transmitted.

4.2 Every phototelegram shall include a preamble. The relevant instructions shall be the same as those for the preamble line of a telegram. But the number of words shall be replaced by a statement of the charging step.

5 Handing in a phototelegram

5.1 A phototelegram may be handed in:

- at the counter of an authorized telegraph office;
- directly at a public station (handing in by messenger).

5.2 A phototelegram from a private station which is received by a public station for delivery to the addressee or for retransmission shall be considered as having been handed in at the public station (handing in by phototelegraphy).

5.3 Depending on the method used, the time of handing in shall be:

- the time of acceptance at the counter of a telegraph office;
- the time of acceptance by the public station (in the case of direct handing in);
- the time of arrival at the public station (service from a private station to a public station).

6 Transmission of a phototelegram

6.1 Phototelegrams of the same rank shall be transmitted by the outgoing station in the order in which they are handed in, and by the intermediate stations in the order of reception.

6.2 A phototelegram to a private station shall, after closure of its office or if its equipment is out of order, be routed to another station of the incoming country only by agreement with the sender.

6.3 A transmission that is unsuccessful because of adverse transmission conditions should be repeated as soon as circumstances permit.

6.4 But if the sender could be informed of unsatisfactory transmission conditions and if he insists upon an attempt at transmission being made, the phototelegram shall be accepted only at the risk of the sender. In this case the service instruction **RISQUES EXPEDITEUR** shall be included in the preamble. If the copy received at the receiving phototelegraph station is not satisfactory after a maximum of three attempted transmissions, no further re-runs should, in principle, be attempted. The sender should be notified of the circumstances.

7 Delivery of a phototelegram

7.1 Phototelegrams received by a public station shall be delivered unless they are to be retransmitted. A phototelegram may be delivered to an addressee in the locality where the public receiving station is located:

- by messenger;
- through personal collection by the addressee.

7.2 A phototelegram transmitted from a public station to a private station shall be considered as delivered to the addressee (delivery by phototelegraphy).

7.3 Phototelegrams addressed to localities that are not connected to the phototelegraph network shall be delivered by post. They shall be considered as postal correspondence from the time they are handed over to the postal service.

7.4 For special reasons, a phototelegram may be kept on hand at a public station — at the sender's request — until a private station re-calls it (collection by phototelegraphy). A public station having phototelegrams on hand intended for a private station shall not act on a request for transmission made by the private station until it has satisfied itself of the identity of the latter.

7.5 Depending on the method applied, the time of delivery of a phototelegram shall be:

- the time of delivery to the addressee;
- the time when the addressee, having been informed of the received phototelegram, expresses the intention of sending a private messenger;
- the time when the transmission is terminated, in service from a public station to a private station;
- the time of handing over to the postal service in the case of delivery of post.

8 Charging

8.1 The rates for phototelegrams in continental and in intercontinental relations exchanged between public stations or from a public station to a private station are governed in Recommendation D.83.

Recommendation F.80 bis

OPERATIONAL PROVISIONS FOR PRIVATE PHOTOTELEGRAPH CALLS¹⁾

1 Field of application

1.1 These provisions apply to calls between private stations or between (outgoing) private stations and (incoming) public stations.

1.2 The rules governing phototelegrams exchanged between private stations and public stations are embodied in Recommendations F.80 and D.80.

2 General

2.1 Private phototelegraph stations may be authorized by the Administration concerned to communicate with one another and to exchange phototelegrams with public stations.

2.2 Administrations undertake to set up connections for such transmissions or to make suitable leased circuits available to private stations at their request.

3 Conditions of acceptance

3.1 Private stations may communicate with all (public and private) phototelegraph stations connected to the international phototelegraph network.

3.2 Calls between private stations set up on the international phototelegraph network are allowed without any time limit. However, when telephone traffic is subjected to restrictions, the exchange of phototelegraph calls between private stations may be delayed or limited by agreement between the terminal centres concerned.

¹⁾ See also Recommendation D.81.

3.3 Connections with a public station may be made available to a private station only during the business hours of the public phototelegraph office. However, the public station may not close until it has accepted all the phototelegrams that the private station has announced it wishes to hand in.

3.4 The conditions under which booked phototelegraph calls are made available are specified in Recommendation F.82.

4 Charging

4.1 Charges for phototelegraph calls in continental and in intercontinental relations exchanged between private stations or from a private station to a public station are governed by Recommendation D.83.

5 Special services

5.1 The special urgent service shall be allowed in relations where it exists for telephone traffic.

Recommendation F.82

RULES FOR PHOTOTELEGRAPH CALLS ESTABLISHED OVER CIRCUITS NORMALLY USED FOR TELEPHONE TRAFFIC

The CCITT,

considering

(a) that, in international phototelegraph communications, the occupation time of international telephone circuits often greatly exceeds the duration of the actual phototelegraph call;

(b) that this drawback results *in part* from the inadequacy of existing rules on the setting up, supervision and clearing of phototelegraph calls over circuits normally used for telephone traffic, even if these circuits have been designated in advance as capable of carrying phototelegraph calls;

(c) that phototelegraph communications between public stations on the one hand and public and private stations on the other, require close collaboration between the telegraph and telephone services of the various Administrations;

(d) that, on the other hand, phototelegraph communications between private stations do not concern the telegraph services, although it is desirable for all phototelegraph calls between public stations, between public and private stations, and between private stations to be established in the same way,

unanimously declares

that the following rules should be applied to the provision of international phototelegraph connections.

1 Field of application

1.1 The rules below define the operating procedure to be followed in the international phototelegraph service when phototelegraph calls are set up on circuits normally used for telephone traffic. They do not apply to phototelegraph transmissions on circuits in permanent use for that purpose or on leased circuits.

1.2 These rules define the procedure applicable to the setting up, supervision and clearing of international phototelegraph calls:

- between public stations;
- between a public and a private station;
- between private stations.

2 General provisions

2.1 In relations where telephone circuits are used for both the phototelegraph service and the telephone service, the Administrations concerned shall assign by mutual agreement a certain number of circuits for phototelegraph transmissions, taking into account the usual requirements of both phototelegraphy and the telephone service.

2.2 These circuits shall be specially marked at terminal exchanges and repeater stations with a view to the protection of the phototelegraph transmissions.

2.3 The telephone circuits used for international phototelegraph transmissions shall, as far as practicable, be four-wire circuits. For phototelegraph transmission, they shall normally be disconnected from the switching equipment used for telephone calls. Interconnection of circuits for setting up phototelegraph calls should be four-wire-four-wire, as far as possible, both on the international and the national side.

2.4 Administrations shall designate in each international phototelegraph terminal centre an authority responsible for the international phototelegraph calls. This authority is in a position to carry out, or cause to be carried out, all the operations necessary for the establishment of international phototelegraph calls. This authority shall henceforth be called the *international phototelegraph position* (IPP).

2.5 Administrations are recommended to centralize, as far as possible, in one place all the technical, operational and charging procedures necessary in an international centre when telephone circuits are used for phototelegraph calls.

2.6 A booking for a phototelegraph call emanating from a public or private phototelegraph station is routed to (or arrives directly at) the IPP of the origin country responsible for setting up the international phototelegraph call that has been booked. This IPP then becomes the control IPP for establishing the call.

3 Setting up, supervision and clearing of international phototelegraph calls

3.1 If the telephone service on the international circuit needed for setting up a phototelegraph call is operated with advance preparation, requests for phototelegraph calls rank in the order in which they are accepted among requests for telephone calls of the same category.

3.2 In this case the control IPP advises the telephone office responsible for these circuits that a phototelegraph transmission is to take place. The control IPP agrees with the telephone service on the probable time at which the phototelegraph transmission will be taking place.

3.3 The IPPs shall proceed as follows when setting up an international call.

3.3.1 The control IPP transmits the following information as quickly as possible to the destination IPP:

- designation of the transmitting station;
- designation of the destination station;
- probable time at which the phototelegraph call will take place;
- where necessary, indication of the subscriber responsible for the charges; and, in addition:
 - a) for calls requested by public stations:
 - category of phototelegram to be transmitted;
 - date and time of handing-in of the phototelegram.
 - b) for calls requested by private stations:
 - category of call requested;
 - date and time of the request.

3.3.2 The destination IPP shall take the necessary steps to advise immediately the destination phototelegraph station by telephone that a phototelegraph transmission is about to take place.

3.3.3 If the called phototelegraph station is in a position to receive the phototelegraph call at the time fixed, the destination IPP informs the control IPP. At the said time, the two IPPs take the necessary steps, in agreement with the telephone service, to establish the call. Care must be taken to avoid interrupting telephone calls in progress.

3.3.4 If the called phototelegraph station is not in a position to receive the call at the time fixed, the destination IPP fixes the time when the transmission is to take place, taking into account the information received from the receiving phototelegraph station. It then communicates the time fixed to the control IPP, which informs the calling station.

3.3.5 The control IPP then takes the necessary measures, in agreement with the telephone service, to establish the phototelegraph call between the stations concerned at the agreed time.

3.4 If the telephone service involved is demand service, the outgoing IPP shall take an available circuit for the phototelegraph call, after ensuring that telephone calls in progress are not interrupted; it shall use this circuit to call the incoming IPP.

3.4.1 To establish a phototelegraph call, it shall transmit the data mentioned under § 3.3.1 above to the incoming IPP, except for the probable time of the phototelegraph call.

3.4.2 The incoming IPP shall take the necessary steps to advise immediately the called phototelegraph station by telephone that a phototelegraph transmission is about to take place.

3.4.3 If the called phototelegraph station is in a position to receive the phototelegraph call immediately, the two IPPs shall straight away establish the necessary connection.

3.4.4 If the called phototelegraph station is not in a position to receive the call immediately, the destination IPP fixes the time when the transmission is to take place, taking into account the information received from the receiving phototelegraph station. It then communicates the time fixed to the control IPP, which informs the calling station. The two immediately clear the international telephone circuit.

3.4.5 At the time agreed upon, the outgoing IPP shall take the necessary steps to establish the phototelegraph call.

3.5 The control IPP shall note the time when the phototelegraph call starts. The beginning of the call is the moment when the connection with the called station is offered to the caller. When the international circuit is extended towards a national PP at the caller's end, the latter shall determine the beginning of the call and indicate it to the IPP in its country when the call is cleared (see § 3.7 below).

3.6 The control IPP supervises the transmission in progress:

- a) on the transmitting (go) path by means of a device enabling it to check, without risk of interference, that transmission is taking place;
- b) on the return path by means of a device enabling it to listen to service conversation from the phototelegraph receiving station.

Intervention in the circuits should be avoided after the call has been established, unless such intervention has been requested by one of the IPPs or one of the phototelegraph stations connected.

3.7 After consulting the receiving phototelegraph station, the calling phototelegraph station announces the end of the call either direct to its IPP, or, in the case of extension of an international circuit, to the national PP on which it depends.

3.7.1 The latter must inform its IPP as quickly as possible, giving the time at which it received notice of the end of the call. The control IPP notes the end-of-transmission time and immediately communicates the notice announcing the end to the incoming IPP and, if necessary, to the transit IPP.

3.7.2 The outgoing and incoming IPPs and any transit IPPs then take the necessary measures to restore the international circuit to the telephone service without delay.

3.7.3 It is recommended that the called station should likewise announce the end of transmission so that the called station may be cleared more quickly.

3.8 Unless the Administrations concerned decide to the contrary, the terminal IPPs do not come to an agreement on the chargeable duration, since this is determined by the control IPP.

4 Special procedures for phototelegraph stations

4.1 For each phototelegram to be transmitted, the outgoing public station shall prepare a narrow tape comprising the preamble and address (and, if necessary, the signature and special service indications), unless these indications have been written on the phototelegram by the sender. This tape is transmitted with the phototelegram.

4.2 As soon as the call is established, the interconnected phototelegraph stations proceed to adjust the equipment and to transmit, in accordance with the instructions of the receiving station, adopting the following order of operations:

- a) if necessary, agreement on the index of cooperation and speed of transmission, then synchronization adjustment by means of the synchronization frequency;
- b) adjustment of the white level;
- c) adjustment of the black level;
- d) phasing;
- e) start;
- f) transmission.

4.3 If the phototelegram is passed to a public station by a private station, the public station shall ask the private station, if necessary, for information regarding establishment of the preamble and conditions of delivery to the addressee.

5 Faulty transmissions

5.1 In the case of fault conditions, the control IPP shall immediately make arrangements to clear the fault or make another circuit available.

5.2 When, after completion of the call, it is seen that the transmission was faulty, the receiving phototelegraph station shall inform its IPP. If it so desires, the receiving phototelegraph station can make a new booking with its IPP for a phototelegraph call, in the manner defined in § 2.6, with the sending station.

5.3 If the phototelegraph station that receives the faulty picture and books a new call is a private station, its attention should be drawn to the fact that both calls will be chargeable if the faults in the picture are not due to the telephone or telegraph services.

Recommendation F.85

OPERATING RULES FOR INTERNATIONAL PHOTOTELEGRAPH CALLS TO MULTIPLE DESTINATIONS¹⁾

The CCITT,

considering

(a) that it seems advisable to provide for rules to which the Administrations may refer in the case where they decide to allow calls enabling several phototelegraph stations in different countries to receive a transmission simultaneously;

(b) that for multiple calls of this kind *international dissemination* (i.e., a distribution of the transmission to different countries) is necessary and possibly *national dissemination* in the incoming countries (i.e., to the various receiving stations belonging to the same national network);

(c) that the participants in a multiple call may be both public stations and private stations (primarily press agencies);

¹⁾ See also Recommendation D.85.

(d) that press agencies are anxious to transmit pictures to their customers (newspaper offices) directly – without retransmission;

(e) that in the case of transmission by series, the agencies also wish to add or disconnect certain customers between two successive transmissions;

(f) that operation over the international part of the collective connection should not be held up by modifications in an incoming country;

considering further

(g) that dissemination equipment can be set up either in the offices of Administrations or on the premises of private enterprises;

(h) that press agencies operate private phototelegraph networks for their own requirements;

(i) that private enterprises should be allowed under certain conditions to use their own equipment and networks to effect an additional dissemination service to their customers;

and recognizing

(j) that satisfactory transmission of phototelegrams to multiple destinations can be obtained only if all the countries concerned employ a uniform mode of operation;

unanimously declares the view

that multiple calls may be allowed in the international service to enable several phototelegraph stations in different countries to receive a transmission from a transmitting station simultaneously.

The rules below define the procedure to be followed for multiple destination calls. The conditions for ordinary connections that are part of the collective link are governed by Recommendations F.82 and D.83.

1 Conditions of acceptance

1.1 A multiple call may be requested for *primary dissemination* to various destination countries (international dissemination) and for *secondary dissemination* in the incoming countries (national dissemination). Simultaneously a national dissemination in the origin country can be combined with the international dissemination.

1.2 Private stations of a receiving country participating in a multiple call (generally press agencies) are allowed to effect simultaneously with reception *further dissemination* to other private stations (generally newspaper offices).

1.3 *Further dissemination* may be made either over a private network or over circuits of the public network made available by the Administration. In the latter case the further dissemination is allowed only within the country where the main receiving station is situated.

1.4 The primary dissemination (including, where necessary, dissemination in the origin country) and the secondary dissemination must be effected by the Administration concerned.

1.5 Any further dissemination over a private network shall in any case be effected by the agency to which the network belongs. When circuits on the public network are used for dissemination to subordinate stations, the Administration concerned shall decide who should effect this further dissemination. For technical and operational reasons (see § 3.4 below), it is preferable that every further dissemination should be carried out by the agency using its own distribution equipment, provided that the equipment has been inspected and approved by the Administration.

1.6 In any case, the installation at the main station shall be such that the operator using it can so control operations as to ensure that the subordinate stations cannot enter into communication with the transmitting station.

2 Setting up and constitution of a multiple call connection

2.1 To obtain a multiple call, the transmitting station shall contact the international phototelegraph position (IPP) of its country and indicate, separately for each country, which phototelegraph stations are to receive the simultaneous transmission. Requests should be made as soon as possible, and in any case not later than two hours before the transmission is to take place, to enable the Administrations concerned to make arrangements to set up the call.

2.2 The IPP of the origin country (see Figure 1/F.85, country A) shall inform the IPPs of the destination countries (countries B, C and D) giving the names of the called participants and the time at which the transmission is to take place (see § 5.2 below). So as not to surcharge the outgoing IPP, the incoming IPPs shall, at the same time, be asked to set up an international connection from their own end at the scheduled time.

2.3 The incoming IPPs shall arrange, where necessary, to make facilities available for national dissemination to participants in the multiple call (see § 5.3 below). If only one participant is designated in an incoming country (C), the international circuit shall be switched directly to the receiving station in question.

2.4 An intermediate connection with the international dissemination shall be requested in a transit country for destination countries to which it is not possible to connect directly for the dissemination from the origin country.

2.5 The outgoing IPP is the control IPP for the multiple call (i.e., as far as the main receiving stations). If an intermediate connection with the international dissemination service has been set up, the transit IPP acts as the sub-control IPP for the part of the multiple call farther down the circuit.

2.6 The control IPP notes the time when the multiple call begins and ends and the time and duration of any interruption or irregularity that may occur during transmission (for the purpose of calculating a refund). The start of the call is the moment at which the multiple connection has been placed at the disposal of the caller. The end of the call is the moment at which it is released by the transmitting station.

2.7 On clearing the multiple call, the control IPP must notify the incoming IPPs concerned of the time at which the call began and ended (to ensure conformity with the national dissemination charges).

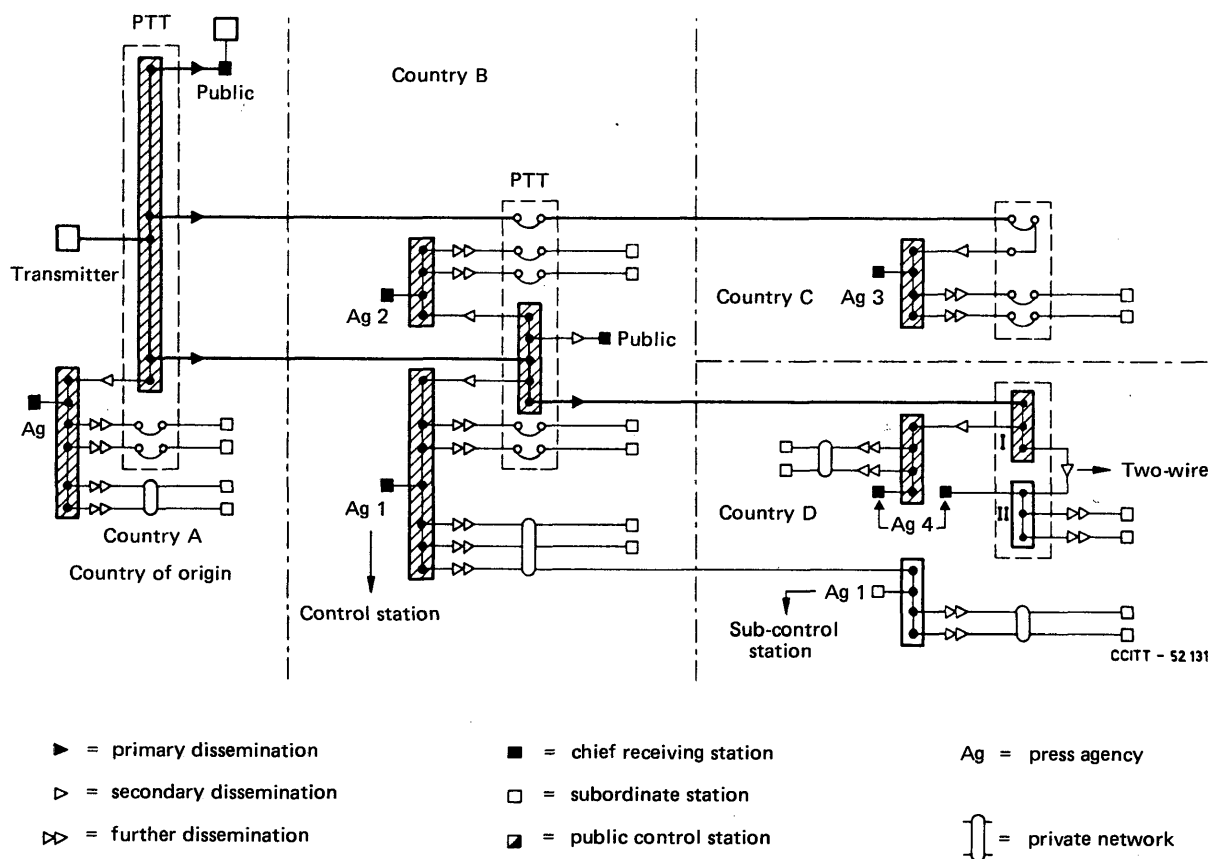


FIGURE 1/F.85

Phototelegraph transmissions to multiple destinations

3 Extension of a multiple call

3.1 When a private dissemination is added to the multiple call, the Administration shall merely make the required circuits available to the user. The individual calls shall then be set up successively to the calling station and shall be charged from the moment they are made available.

3.2 The routing to public network circuits of a phototelegraph transmission received on a leased circuit (see Ag 1 of country D) is not allowed.

3.3 Each press agency is the control station for the connections with its customers. In secondary private dissemination (see Ag 1 in country D) the second connecting station becomes the sub-control station for the part farther down the circuit.

3.4 Should an Administration ensure itself (see § 1.5 above) the further dissemination on the public network (country D), two separate distribution panels (I and II, country D) will be necessary to connect the incoming circuit separately to the main station (Ag 4) and to its group of customers. To prevent subordinate stations from coming in on the international part of the collective call, the interconnection between I and II must be made by a one-way channel. The private enterprise (Ag 4) must direct the operations for which it is responsible in the two sections of the further dissemination facilities. Since the Administration is responsible for making its dissemination facilities available at the right time, and in view of the operational difficulties, in particular resulting from any change required in this part of the further dissemination, this mode of operation is not recommended.

4 Speech circuit

4.1 The speech circuit is a leased telephone circuit that provides a direct connection between the site of the transmitting equipment and the control IPP. This type of connection expedites the procedures preparatory to the call and enables rapid action to be taken to overcome any difficulties experienced during transmission. It also allows timely notice to be given of the end of the multiple call and, further, it is a suitable means for determining exactly the chargeable duration of the call.

4.2 The speech circuit may, however, be replaced by a telephone connection set up from the transmitting station over the general telephone network.

5 General provisions

5.1 The setting up of a multiple call may involve unforeseen delays in practice, particularly when intermediate connection centres are used in the international dissemination sector. For these reasons, it is impossible for Administrations to give any guarantee that a multiple call will be made available at a specific time.

5.2 It is for the control IPP to estimate the time required to make the requested call available. It must inform all IPPs (incoming and transit, if need be) of the time at which transmission is to take place.

5.3 The incoming IPPs must do their utmost to respect the scheduled time for setting up the international connection to the control (or sub-control) IPP. To avoid any delay in commencing the simultaneous transmission because of arrangements to be made in an incoming country, the national extension (dissemination or simple prolongation) should in all cases be ready before the international circuit is made available.

5.4 If a called station is unable to accept the call at the scheduled time, the incoming IPP shall so inform the control IPP. It will be for the station requesting the multiple call to decide whether transmission should be held up until the station is ready to receive, or whether the station should be brought in later or whether it should be excluded from the call. In any case, the call charge begins from the time the caller is informed of the position.

5.5 When it is not possible to set up an international or national connection required for the multiple call within six minutes after the appointed time, the control IPP shall draw the caller's attention to the difficulties that have arisen. Whatever course the caller decides to take, the part of the call that has taken place will be charged for.

5.6 When a request is made to extend to other relations a call (single or multiple) that has already begun, it must be regarded as a new call request. This call will be made available to the caller as soon as it is set up, and will be charged for separately from that time. The caller must indicate the time at which it should be combined with the original call.

SECTION 8

STATISTICS AND PUBLICATIONS ON INTERNATIONAL TELEGRAPH SERVICES

Recommendation F.91

GENERAL STATISTICS FOR THE TELEGRAPH SERVICES

The CCITT,

considering

(a) that it is useful to have general statistics concerning the telegraph facilities provided by each country. On the other hand, the statistics should not contain information the interpretation of which can be doubtful, or information the assembling of which would involve Administrations in more work than is warranted by the usefulness of the information.

(b) that the general statistics should contain only items typical of the telegraph facilities of the country concerned, such as traffic in the public telegram service and the scale of the telex network,

unanimously recommends

(1) that the General Secretariat of the Union should gather all the telegraph statistics indicated in the Annex to this Recommendation;

(2) that this information should be published annually;

(3) that this information may be included in a publication containing other statistics requested by other CCITT Recommendations such as Recommendation C.1 [1].

ANNEX A

(to Recommendation F.91)

Telegraph statistics for the year

1. Population of country according to latest census

2. Public telegram service

2.1 Number of national telegrams originated ¹

2.2 Number of full-rate international telegrams originated ^{1, 2}

2.3 Number of international letter-telegrams originated ¹

¹ In thousands of paid telegrams.

² Including URGENT telegrams.

3. Telex service

3.1 Number of subscriber lines ³

3.2 Originated international telex traffic in thousands of chargeable minutes

4. Phototelegram service

4.1 Number of international phototelegrams originated ⁴

³ Lines on which calls are paid (i.e. excluding service and gentex connections) and which have access to the international telex network, whether by direct connection or through translation equipment.

⁴ Phototelegrams handed in at a public phototelegraph office either directly or through a private phototelegraph station.

Reference

- [1] CCITT Recommendation *Yearbook of common carrier telecommunication statistics*, Vol. I, Rec. C.1.

Recommendation F.92

SERVICE CODES

The CCITT,

considering

(a) that it would be desirable for all codes and abbreviations commonly used in telecommunication services to be published in one book;

(b) that the various codes now in use, if assembled in a single volume, might provide the basis for a more unified system of service codes,

unanimously declares the view

1 that the various codes and abbreviations commonly used in international telecommunication services should be assembled in one volume and published by the ITU General Secretariat;

2 that this publication should be called *Codes and abbreviations for the use of the international telecommunication services* [1];

3 that the contents thereof should be arranged in three main sections, headed *Decoding*, *Coding* and *Miscellaneous*;

4 that the contents should comprise in whole or in part the codes or code documents listed below:

4.1 The service indications and service instructions as a whole as shown in CCITT Recommendation F.1;

4.2 The *Q* Code as a whole as shown in the Appendices to the *Radio Regulations* [2];

4.3 The miscellaneous abbreviations and signals as a whole as shown in the Appendices to the *Radio Regulations* [2];

- 4.4 The Phonetic Alphabet and Figure Code as a whole as shown in the Appendices to the *Radio Regulations* [2];
- 4.5 The SINPO Code together with the footnotes as shown in the Appendices to the *Radio Regulations* [2];
- 4.6 The SINPFEMO Code together with the footnotes as shown in the *Radio Regulations* [2];
- 4.7 The tables indicating overall rating for radiotelegraphy and telephony as shown in the Appendices to the *Radio Regulations* [2];
- 4.8 The code expressions used in the international telex service as a whole as shown in CCITT Recommendation F.60;
- 4.9 The service codes and abbreviations to be used in gentex operation as a whole as shown in CCITT Recommendation F.1;
- 4.10 The five-letter code groups as necessary from the former Cable and Wireless Ltd. *Service Code* book;
- 4.11 The Z Code as necessary from the former Cable and Wireless Ltd. *Service Code* book;
- 4.12 The spelling codes for telephone operators as shown in the CCITT *Instructions for the International Telephone Service* [3];

5 that the material in the sections referred to in § 3 above should be set out as follows:

5.1 *Decoding section*

5.1.1 In this section, all code letter groups and abbreviations, irrespective of their source, should be listed in alphabetical order down the left-hand side of the page with their meaning given on the right.

5.1.2 The Q and Z Codes should be excluded from this alphabetical sequence, although there should be cross references in the relevant places in the sequence showing where these two codes may be found elsewhere in the book, i.e. in the Miscellaneous section.

5.2 *Coding section*

This section should comprise:

5.2.1 The five-letter group codes taken from the former Cable and Wireless Ltd. *Service Code*. This material should be alphabetically classified according to the fields of operation in which the codes are used.

5.2.2 A second part, consisting of groups of codes according to the use made of them, thus:

- a) The code expressions used in the international telex service;
- b) The service codes and expressions to be used in gentex operation;
- c) The service indications and service instructions used in the public telegram service;
- d) The miscellaneous abbreviations and signals taken from the *Radio Regulations* [2];

5.2.3 The codes and abbreviations from the foregoing services should be arranged in alphabetical order.

5.3 *Miscellaneous section*

The following should appear in the Miscellaneous section, separately, and each with its own heading:

- a) SINPO Code;
- b) SINPFEMO Code;

- c) Phonetic Alphabet and Figure Code;
- d) Spelling Code for telephone operators;
- e) *Q* Code as shown in the Appendices to the *Radio Regulations* [2];
- f) *Z* Code;
- g) Overall rating for radiotelegraphy and radiotelephony;

6 that the book of *Codes and abbreviations for use in international telecommunication services* should appear in three separate booklets (one in English, one in French, and one in Spanish);

7 that Study Group I, being responsible inter alia for the Series F Recommendations on telegraph operation, will periodically undertake the necessary amendments to Recommendation F.92 in the light of new requirements, taking due account of the relevant decisions by Administrative Conferences of the ITU and by Plenary Assemblies of the CCIR and CCITT.

References

- [1] *Codes and abbreviations for the use of the international telecommunication services*, 4th edition, ITU, Geneva, 1982.
- [2] *Radio Regulations*, ITU, Geneva, 1982.
- [3] CCITT, *Instruction for the international telephone service, (1st October 1985)*, ITU, Geneva, 1985.

Recommendation F.93

ROUTING TABLE FOR OFFICES CONNECTED TO THE GENTEX SERVICE

The CCITT,

in view of Recommendation F.20, § 4,

considering

that gentex offices need information about the routing of traffic to the offices connected to the gentex service,

unanimously declares

(1) that the ITU General Secretariat should issue a document containing the routing lists supplied by the countries connected to the gentex service, in accordance with Recommendation F.20, § 4;

(2) that changes in these lists, if notified after this document is published, should be communicated by means of the ITU *Operational Bulletin*.

TABLE OF INTERNATIONAL TELEX RELATIONS AND TRAFFIC

The CCITT,

considering

(a) that Resolution No. 4 of the *World Administrative Telegraph and Telephone Conference* (Geneva, 1973) [1] lays down that the General Secretariat should publish, among other things, a list of telex circuits and a list of telex routes;

(b) that it would be of interest to compile the following particulars for each telex relation in one and the same list: routing, number of circuits available in the relation for direct routing (i.e. without switching in a transit country), itinerary and type of circuits, mode of operation and outgoing traffic in the relation,

unanimously declares the following view

1 All Administrations of countries taking part in the international telex service should submit to the Secretary-General of the ITU, between 1 January and 30 April of each year, a list based on the position on 31 December of the preceding year, describing the telex routes, direct telex circuits, mode of operation used on these circuits and telex traffic for each relation on which outgoing telex calls have been established. If a telex service exists with a particular country to which no telex traffic was sent during the year in question, this relation should not be included in the list.

2 This list should relate to outgoing traffic that has originated in the country responsible for the list. It should indicate normal routing for outgoing calls, the transit countries taking part in the distribution of telex charges on direct circuits, the number of telex circuits that could be used by traffic from that country, the mode of operation for outgoing calls on these circuits, and the volume of annual outgoing traffic in chargeable minutes for the relation under consideration.

3 This list should be prepared on the basis of the annexed table (in which figures are given purely by way of example).

4 The General Secretariat should publish these lists each year, at the latest in September, in a document entitled *Table of international telex relations and traffic* [2].

ANNEX A
(to Recommendation F.95)

Year⁴

List of international telex relations and outgoing traffic for Switzerland and the Principality of Liechtenstein^{1,2}
Number of subscriber lines³ on 31 December ...⁴

Relation to ⁵	Routing ⁶		Number of circuits ^{9, 10}						Operating Mode for outgoing calls ¹¹	Annual outgoing traffic in chargeable minutes
	Direct or Transit ⁷	Transit network or international transit exchange ⁸	Outgoing only			Bothway				
			Cable	Radio	Satellite	Cable	Radio	Satellite		
1	2	3	4	5	6	7	8	9	10	11
Abu Dhabi	Tr	Bahrain	-	-	-	-	-	-	S	7635
Alaska	Tr	New York	-	-	-	-	-	-	S	165
Algeria	D	Forf.	7	-	-	-	-	-	A	85171
Austria	D	-	39	-	-	-	-	-	A	1781670
Bangladesh	D	Forf.	-	-	-	-	-	1	M	7119
Belgium	D	Forf.	41	-	-	-	-	-	A	2051921
Canada	D	Forf.	6	-	11	4	-	5	A	234674
Finland	D	Forf.	12	-	-	-	-	-	A	368539
Senegal	Tr	Paris	-	-	-	-	-	-	S	20881
Czechoslovakia	D	Forf.	11	-	-	-	-	-	A	234563
Tunisia	D	Forf.	5	-	-	-	-	-	A	58721
Zaire	Tr	Brussels	-	-	-	-	-	-	S/M	23442

¹ The list should be prepared by and for every country (in the sense of a geographical entity) that provides outgoing international telex traffic.

² If there are several telex networks in one country, a single list should be prepared for that country. Similarly, in column 1, such a country should be described under a single relation and the traffic figures and number of circuits should be given as global figures.

³ Lines on which calls are paid (i.e. excluding service and gentex connections) and which have access to the international telex network, whether by direct connection or through translation equipment.

⁴ Statistical year.

⁵ The relations should be listed in French alphabetical order (reference should be made to the *List of Addresses* [3] issued by the General Secretariat).

⁶ Both primary and secondary (but not emergency) routes should be shown where appropriate.

⁷ For direct circuits, insert D in this column, otherwise insert Tr.

⁸ If direct circuits (D), show the transit countries taking part in the distribution of telex charges in the relation, use the telex network identification codes of the networks concerned, but if they are telex circuits charged on a lump sum basis, insert Forf. For transit relations (Tr) show only the location of the first international transit centre traversed after leaving the origin country and, where more than one network operates in that transit location, the particular network should be indicated by adding its telex network identification code in brackets.

⁹ Mention the number only in respect of a direct relation (i.e. without switching in any other countries that may be crossed).

¹⁰ In the *Cable* column, indicate the number of circuits set up on cables, overhead lines, radio relay links, etc., i.e. by any means other than HF radio or satellite. In the *Radio* column, indicate the number of circuits making use of an HF radio path.

¹¹ Show the operating mode for all relations in the outgoing country by one of the following abbreviations:

A — Automatic — subscribers can select subscribers in the other country directly.

S — Semi-automatic — the operator selects subscribers in the destination country manually.

M — Manual — intervention by at least two operators is required.

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, Resolution No. 4, ITU, Geneva, 1973.
- [2] *Table of international telex relations and traffic*, ITU, Geneva, (yearly publication).
- [3] *List of addresses of administrations, recognized private operating agencies, international or regional organizations concerned with telecommunications, and scientific or industrial organizations participating in CCI activities*, ITU, Geneva.

LIST OF DESTINATION INDICATORS

The CCITT,

considering

that to facilitate the operation of the message retransmission system in accordance with Recommendation F.31, destination indicators must be established uniformly and a list of them placed at the disposal of the offices engaged in this operation;

unanimously declares the following

1 A destination indicator must be assigned to each office directly connected with the telegram retransmission system. Offices handling a large amount of international traffic should also be assigned a destination indicator. In each country at least one destination indicator (an *all others* indicator) must be chosen for offices not assigned their own destination indicator.

2 Each destination indicator consists of four letters. The first two letters¹⁾ characterize, in a uniform way, a particular destination country or a particular network in the destination country. The third and fourth letters characterize the office of destination in that country or network. An additional combination of the first and second letters is required for an *unrouted* indicator in countries where there are competing networks to allow for the case where the office of origin has no special preference for routing a telegram over a specific network.

3 Particular combinations

3.1 The last letter of an *all others* indicator will always be X.

3.2 Where there is only one indicator for all the offices in a country, the last two letters should be XX.

3.3 The combinations SV, MV, XQ and YQ as the third and fourth letters of indicators should preferably be reserved for the segregation of particular types of telegram at gateway cities or at major international telegraph offices. (See Recommendation F.31, §§ 2.2.3 and 3.5 on the use of such special combinations, among other things, in origin indicators and in destination indicators for return service advices.)

3.4 Destination indicators having ZZ as the third and fourth letters should be strictly reserved for automatic service notes, which are designed to trigger an automatic action at a connected telegram retransmission centre. (See Recommendation F.31, § 10.2.)

3.5 Destination indicators having X as the first letter should not be allocated to any specific destination country or network. The destination indicator XQXQ is reserved for use in emergency broadcast messages described in Recommendation F.31, § 10.4.3.

4 Structure of the List

4.1 A list of destination indicators will be maintained by the Secretary-General in accordance with notifications by Administrations.

¹⁾ As noted in Recommendation F.68, for Administrations using two-character telex network identification codes, these codes should be the same as the first two characters used to characterize their country (or network) in their destination codes for the telegram retransmission system.

- 4.2 As far as possible the whole of the four-letter destination indicators should be such that any indicator differs in at least two letters from any other.
- 4.3 Discontinued country (or network) indicators shall not be reallocated for a period of at least two years.
- 4.4 Offices connected directly with the telegram retransmission system are specially identified in the *List*.
- 4.5 Origin indicators for the special use of Administrations in accordance with § 2.2.3 of Recommendation F.31 should be included in a separate part of the *List*.
- 4.6 Another part should list two-letter indicators to be used in the preamble line of ETATPRIORITE or ETAT telegrams to designate international organizations (see provision A218 in Recommendation F.1).

5 Publication

- 5.1 The *List* will be issued and sold through the General Secretariat of the Union.
- 5.2 It will be kept up to date by means of amendments published in the ITU *Operational Bulletin*. The amendments will become effective on the first day of the third month following publication.

SECTION 9

SCHEDULED AND LEASED COMMUNICATION SERVICES

Recommendation F.100

SCHEDULED RADIOCOMMUNICATION SERVICE

The CCITT,

unanimously declares

that the following rules should be adopted for the scheduled radiocommunication service.

1 General

1.1 These rules are to be observed in the scheduled radiocommunication service in which radiocommunications are transmitted to one or more destinations.

1.2 Only those senders and addressees who satisfy the provisions and conditions agreed between the Administrations concerned shall be allowed to participate in this service.

2 Conditions of acceptance

2.1 Transmissions over the scheduled radiocommunication service must consist only of information and news relating to politics, commerce, etc., and must contain no communication of a private nature and no messages on behalf of third parties. They may include, however, brief indications as to how they should be passed on and to whom, provided that the time required to transmit them does not exceed 5 per cent of the total time taken to transmit the information or news, or, where appropriate, 5 per cent of the number of words of which the information or news consists.

2.2 The sender shall communicate to the Administration of the country of emission the addresses of any intended recipient or recipients.

2.3 The radiocommunications may be expressed either in plain language or in secret language, as decided by the Administrations of the countries of emission and of reception. In the absence of special arrangements between the Administrations concerned, the only languages authorized for plain language shall be French, one of the languages designated by the country of origin or one of the languages of one of the countries of reception. The Administrations of the countries of emission and of reception shall reserve to themselves the right to require the deposit of the codes used.

2.4 The radio transmissions shall bear, as the address, an arbitrary word placed immediately before the text.

3 Conditions of transmission

3.1 The Administration of the country of emission shall communicate to the other Administrations the address of any person residing in their territory for whom the radiocommunications are intended. It shall notify, in addition, in respect of each addressee, the date fixed for the first reception, the name of the emitting station and the address of the sender. The Administrations shall notify one another of any changes which occur in the number and the addresses of the senders and recipients.

3.2 Where the services are operated by recognized private operating agencies, Administrations may authorize such agencies to communicate the notifications required under the preceding paragraph.

3.3 Each Administration shall take, as far as is practicable, suitable measures to ensure that only the stations authorized for this special service of communication make use of the radiocommunications in question and then only of those intended for them. The provisions of the Convention relating to the secrecy of telecommunications shall apply to these radiocommunications.

3.4 These radiocommunications shall be transmitted at fixed times.

4 Conditions of reception

4.1 The Administration of the country of reception shall decide whether reception shall be permitted in its country. It may authorize the direct reception of such communications by the addressees designated by the sender or may itself make reception equipment available to the addressees to this end. It shall notify the Administration of the country of emission of the conditions under which reception takes place.

5 Charging

5.1 The charge to be collected from the sender shall be fixed by the Administration of the country of emission.

5.2 Apart from any charges levied for the establishment and working of private receiving stations or for the lease of receiver equipment, the addressees of these radiocommunications may be subjected by the Administration of their country to the payment of a receiver charge, the amount and method of assessment of which shall be decided on by that Administration.

5.3 The charges for these radiocommunications shall not enter into the international accounts.

SECTION 10

MARITIME MOBILE AND MOBILE SATELLITE SERVICES

Recommendation F.110¹⁾

OPERATIONAL PROVISIONS FOR THE MARITIME MOBILE SERVICE

Introductory Notes

1 Pursuant to Resolutions Nos. Mar2 – 22 and Mar2 – 23 and Recommendation Mar2 – 18 of the *World Administrative Maritime Radio Conference* [1], the CCITT drew up Recommendations E.200/F.110 and D.90 concerning operational and accounting provisions for the Maritime Mobile Service. Having accepted the conclusions of the CCITT studies, the *World Administrative Radio Conference* [2], adopted texts dealing with the basic principles on operating and accounting procedures, leaving the detailed application of these principles to be covered by CCITT Recommendations.

2 Article 66 (No. 5085) of the *Radio Regulations* [3] specifies that the provisions of the *Telegraph Regulations* [4] and the *Telephone Regulations* [4], taking into account CCITT Recommendations, shall apply to radiocommunications in so far as the relevant provisions of the *Radio Regulations* do not provide otherwise.

3 Since, in accordance with Article 69 of the *Radio Regulations*, Article 66 entered into force on 1 January 1981, the provisions of this Recommendation were applicable from that date.

4 References commencing with the letters J, K, L and M concern provisions in Divisions J, K, L and M respectively of Recommendation D.90 entitled *Charging, accounting and refunds in the Maritime Mobile Service*.

5 For the purpose of this Recommendation the term *Maritime Mobile Service* should be understood to embrace the Maritime Mobile-Satellite Service as well as the MF, HF, VHF and UHF radio media, unless specifically stated otherwise.

6 Throughout this Recommendation the term *Administration* means that recognized private operating agency/agencies are included. However, where this term is used in respect of notification by Administrations to the General Secretariat of the ITU, this applies only to recognized private operating agencies that have been authorized by Administrations to carry out such notification.

7 For the purpose of this Recommendation, the terms *mobile station* and *land station* should be considered as analogous to *ship station* and *coast station* respectively used in the *Radio Regulations*.

¹⁾ This Recommendation is also included in the Series E Recommendations under the number E.200.

CONTENTS

DIVISION A – *General*

- 1 *Definitions*
- 2 *Order of priority*

DIVISION B – *Radiotelegrams*

- 1 *Preparation and handing-in of radiotelegrams*
 - 1.1 Plain language
 - 1.2 Indication of station of origin
 - 1.3 Use of accounting authority identification codes by mobile stations
 - 1.4 Time of handing-in
 - 1.5 Address
- 2 *Counting of words*
- 3 *Routing of radiotelegrams*
- 4 *Transmission of radiotelegrams*
 - 4.1 Routine repetition
 - 4.2 Doubtful reception
 - 4.3 Long-distance radiocommunications
 - 4.4 Routine retransmission by mobile stations
 - 4.5 Period of retention of radiotelegrams at land stations
- 5 *Advice of nondelivery*
- 6 *Radiomaritime letters*
- 7 *Special services*
- 8 *Special conditions relating to the maritime mobile-satellite service*

DIVISION C – *Radiotelex*

- 1 *General*
 - 1.1 Routing of calls
 - 1.2 Information to be supplied, as necessary, by the calling party
 - 1.3 Call duration
 - 1.4 Validity of requests
 - 1.5 Exchange of radiotelegrams by radiotelex
- 2 *Traffic from mobile stations*
 - 2.1 Automatic service
 - 2.2 Single-operator service
 - 2.3 Semiautomatic service
 - 2.4 Manual service
 - 2.5 Store-and-forward service
 - 2.6 Procedures

- 3 *Traffic to mobile stations*
 - 3.1 Automatic procedure
 - 3.2 Single-operator procedure
 - 3.3 Semiautomatic procedure
 - 3.4 Manual procedure
 - 3.5 Store-and-forward
- 4 *Radiomaritime telex letter*
 - 4.1 Definition
 - 4.2 Operational procedures

DIVISION D — *Radiotelephone*

- 1 *General*
 - 1.1 Language to be used
 - 1.2 Priority
 - 1.3 Routing of calls
 - 1.4 Information to be supplied by the calling party
 - 1.5 Call duration
 - 1.6 Validity of requests
 - 1.7 Exchange of radiotelegrams by radiotelephony
- 2 *Traffic from mobile stations*
 - 2.1 Automatic service
 - 2.2 Single-operator service
 - 2.3 Semiautomatic service
 - 2.4 Manual service
 - 2.5 Store-and-forward service
 - 2.6 Procedures
- 3 *Traffic to mobile stations*
 - 3.1 Automatic procedure
 - 3.2 Single-operator procedure
 - 3.3 Semiautomatic procedure
 - 3.4 Manual procedure
 - 3.5 Store-and-forward procedures

DIVISION E — *Radiotelexogram*

- 1 *General*
 - 1.1 Definition
 - 1.2 Provision of service
 - 1.3 Validity of requests
- 2 *Operational procedures*
 - 2.1 Transmission
 - 2.2 Information to be supplied to land station

DIVISION A

GENERAL

1 Definitions

- A1 1.1 The **controlling operator** is the first land-based operator handling the radiotelegram, radiotelex call or radiotelephone call in the direction from mobile station.
- A2 1.2 *Accounting authority identification code*
For the meaning of this term see J2 in Recommendation D.90.
- A3 to A20 not allocated

2 Order of priority

- A21 2.1 The order of priority for communications,²⁾ in the maritime mobile service shall be as follows, except where impracticable in a fully automated system in which, nevertheless, communications described in A22 shall receive priority.
- A22 a) Distress calls, distress messages and distress traffic;
- A23 b) Communications preceded by the urgency signal;
- A24 c) Communications preceded by the safety signal;
- A25 d) Communications relating to radio direction-finding;
- A26 e) Communications relating to the navigation and safe movement of aircraft engaged in search and rescue operations;
- A27 f) Communications relating to the navigation, movements and needs of ships, and weather observations messages destined for an official meteorological service;
- A28 g) Radiotelegrams relative to the application of the United Nations Charter (**ETATPRIORITE**);
- A29 h) Government radiotelegrams with priority (**ETATPRIORITE**) and government calls for which priority has been expressly requested;
- A30 i) Ordinary private radiotelegrams and **RCT** radiotelegrams for which priority has been requested.
- A30 bis j) Service communications relating to the working of the telecommunication service or to communications previously exchanged;
- A31 k) Government communications other than those shown in A29, ordinary private communications and **RCT** radiotelegrams;
- A32 l) Radiomaritime letters.

²⁾ The term *communications* as used in A21 to A32 means radiotelegrams, radiotelephone calls and radiotelex calls.

DIVISION B

RADIOTELEGRAMS

1 Preparation and handing-in of radiotelegrams

1.1 Plain language

- B1 1.1.1 Groups of letters and figures from the *International Code of Signals* are considered as plain language in radiotelegrams.

1.2 Indication of station of origin

- B2 1.2.1 When, because of duplication of names, the name of a station is followed by its call sign, the latter shall be joined to the name of the station by a fraction bar.

Examples: **OREGON/OZOC** (not **OREGON/OZOC**);

ROSE/DDOR (not **ROSE/DDOR**).

- B3 1.2.2 When a land station retransmits a radiotelegram received from a mobile station, it shall transmit, as office of origin, the name of the mobile station in which the radiotelegram originated as this name appears in the appropriate list of stations, followed by its own name. Where appropriate, B2 shall also apply.

- B4 1.2.3 In order to avoid any confusion with a telegraph office or a fixed station of the same name, the land station may, if desirable, complete the indication of the name of the mobile station of origin by the word **SHIP** or **AIRCRAFT**, placed before the station of origin.

1.3 Use of accounting authority identification codes by mobile stations

- B5 1.3.1 The mobile station operator should, as a standard operating procedure, give the *accounting authority identification code* (AAIC) at the end of the preamble line. If the AAIC is missing, the land station operator should request **QRC?**

1.4 Time of handing-in

- B6 1.4.1 In the transmission of radiotelegrams originating in a mobile station, the date and time of handing-in at this station are given by two groups of figures in the preamble line, the first indicating the day of the month (1 to 31) and the second consisting of a group of figures (0001 to 2400) indicating the hours and the minutes.

- B7 1.4.2 The time of handing-in is indicated in Coordinated Universal Time (UTC).

Note – For practical operating purposes, UTC may be considered as equivalent to Greenwich Mean Time (GMT).

1.5 Address

- B8 1.5.1 The address of radiotelegrams destined for mobile stations must be as complete as possible and must include:

- B9 a) the name or the designation of the addressee, with supplementary particulars, if necessary;
- B10 b) the name of the mobile station followed, when necessary, by its call sign, the latter joined by a fraction bar to the name of the station as shown in the *List of Ship Stations* [5];
- B11 c) the name of the land station through which the radiotelegram is to be forwarded, as it appears in the appropriate list of stations.

- B12 1.5.2 If the mobile station does not appear in the *List of Ship Stations* [5], the sender should, if possible, indicate the nationality and route followed by the mobile station.

- B13 1.5.3 However, the name and call sign required under B10 may be replaced, at the risk of the sender, by particulars of the passage made by such mobile station, indicated by the names of the ports or airports of departure and of destination, or by any equivalent indication.
- B14 1.5.4 Mobile stations may add to the name of the office of destination:
- the name of the territorial subdivision, and/or
 - the destination or country
- if it is doubtful whether, without such addition, the radiotelegram could be correctly routed without difficulty.
- B15 1.5.5 The controlling operator retains or deletes the particulars in B14 or further amends the name of the office of destination as is necessary or sufficient for forwarding the radiotelegram to its proper destination.

2 Counting of words

- B16 2.1 The word count of the office of origin is decisive in the case of radiotelegrams destined for mobile stations, and that of the controlling operator is decisive in the case of radiotelegrams originating in mobile stations.³⁾
- B17 2.2 If two land stations participate in the handling of a radiotelegram, the decision of the controlling operator accepting the radiotelegram from the originating mobile station will prevail and will be valid for international accounting.

3 Routing of radiotelegrams

- B18 3.1 Radiotelegrams should be routed via the land station that is considered most suitable in relation to the mobile station concerned.
- B19 3.2 However, to expedite or to facilitate the routing of radiotelegrams to a land station, a mobile station may transmit them to another mobile station. The latter shall dispose of such radiotelegrams in the same manner as if they originated with itself (see B39 to B42).
- B20 3.3 If the sender of a radiotelegram handed in at a mobile station has indicated the land station to which he desires his radiotelegram to be sent, the mobile station shall, in order to effect this transmission to the land station indicated, wait, if necessary until the conditions specified in B18 and B19 are fulfilled.
- B21 3.4 In order to facilitate disposal of traffic, and subject to such restrictions as individual Administrations may impose, land stations may, in exceptional circumstances and with discretion, without incurring additional charges, exchange radiotelegrams and service messages relating thereto.

4 Transmission of radiotelegrams

4.1 Routine repetition

- B21A 4.1.1 Routine repetition means the repetition of isolated figures and mixed groups containing figures in the address and text parts. Any such repetition should be given after the text part and be preceded by the code COL.
- B21B 4.1.2 In view of Recommendation F.1 routine repetition is not compulsory. It is used at the discretion of the sending station where the transmission conditions warrant it.
- B21C 4.1.3 Where a mobile station gives a routine repetition, the land station shall use the repeated groups to check the received address and text parts, but should not retransmit the routine repetition.

³⁾ Refer also to K17 in Recommendation D.90.

4.2 *Doubtful reception*

- B22 4.2.1 In the mobile service, when communication becomes difficult, the two stations in communication should make every effort to complete the radiotelegram in course of transmission. The receiving station may request not more than two repetitions of a radiotelegram of which the reception is doubtful.
- B23 4.2.2 If this triple transmission is ineffective, the radiotelegram is kept on hand in case a favourable opportunity for completing its transmission occurs.
- B24 4.2.3 If the transmitting station considers that it will not be possible to re-establish communications with the receiving station within twenty-four hours, it proceeds as follows:
- B25 4.2.4 If the transmitting station is a mobile station, it immediately informs the sender of the reason for the non-transmission of his radiotelegram. The sender may then request:
- B26 a) that the radiotelegram be transmitted through another land station or through other mobile stations; or
- B27 b) that the radiotelegram be held until it can be transmitted without additional charge; or
- B28 c) that the radiotelegram be cancelled.
- B29 4.2.5 If the transmitting station is a land station, it applies the provisions of B43 to B54 to the radiotelegram.
- B30 4.2.6 When a mobile station subsequently transmits a radiotelegram thus held to the land station that incompletely received it, this new transmission must bear the service instruction **AMPLIATION** at the end of the preamble line of the radiotelegram.
- B31 4.2.7 However, if the radiotelegram is transmitted to another land station subject to the same Administration, the new transmission must bear, at the end of the preamble line, the service instruction **AMPLIATION VIA ...** (insert here the call sign of the land station to which the radiotelegram was transmitted in the first instance) and the Administration in question may claim only the charges relating to a single transmission.
- B32 4.2.8 The other land station, which thus forwards the radiotelegram, may claim from the mobile station of origin any additional charges resulting from the transmission of the radiotelegram between itself and the office of destination.
- B33 4.2.9 When the land station designated in the address as the station by which the radiotelegram is to be forwarded cannot reach the destination mobile station and has reason to believe that such mobile station is within the service area of another land station of the Administration to which it is itself subject, it may, if no additional charge is incurred thereby, forward the radiotelegram to this other land station.
- B34 4.2.10 A station of the mobile service that has received a radiotelegram and has been unable to acknowledge its receipt in the usual way, must take the first favourable opportunity to give such acknowledgement.
- B35 4.2.11 When the acknowledgement of receipt of a radiotelegram transmitted between a mobile station and a land station cannot be given direct, it is forwarded through another mobile or land station by service advice if the latter is able to communicate with the station that has transmitted the radiotelegram in question. In any case, no additional charge shall result.

4.3 *Long distance radiocommunications*

- B36 4.3.1 Administrations reserve the right to organize a long-distance radiocommunication service between land stations and mobile stations, with deferred acknowledgement of receipt or without any acknowledgement of receipt.
- B37 4.3.2 Each Administration designates the land station or stations participating in the long-distance radio service. An indication to this effect shall appear in the *List of Coast Stations* [6].
- B38 4.3.3 When there is doubt about the accuracy of any part of a radiotelegram transmitted under either of the systems mentioned in B36, the indication *doubtful reception* is entered on the copy delivered to the addressee, and the doubtful words or groups of words are underlined. If words are missing, blanks are left in the places where these words should be.

4.4 *Routine retransmission by mobile stations*

- B39 4.4.1 When a land station cannot reach the mobile station for which a radiotelegram is destined, the land station may, in order to forward the radiotelegram to its destination, have recourse to the help of another mobile station provided that the latter consents. The radiotelegram is then transmitted to this other mobile station. The help of the latter is given free of charge.
- B40 4.4.2 The same provision is also applicable to traffic from mobile stations to land stations, when necessary.
- B41 4.4.3 The station assisting in the free retransmission in accordance with B39 and B40 must enter the service abbreviation **QSP** ... (name or call sign of the mobile station) at the end of the preamble line of the radiotelegram.
- B42 4.4.4 In order that a radiotelegram thus forwarded may be considered as having reached its destination, the station that has made use of this indirect route must have obtained the regular acknowledgement of receipt, either direct or by an indirect route, from the mobile station for which the radiotelegram was destined or from the land station to which it was to be forwarded, as the case may be.

4.5 *Period of retention of radiotelegrams at land stations*

- B43 4.5.1 When it has not been possible for a land station to transmit a radiotelegram to a mobile station by the morning of the fifth day (not including the day of handing-in), the land station treats the radiotelegram as undelivered and notifies the sender accordingly.
- B44 4.5.2 The sender of a radiotelegram destined for a mobile station may specify the number of days during which the land station may hold the radiotelegram. In that case, the service indication **Jx** (x days), specifying the number of days (ten at the most) exclusive of the day of handing-in of the radiotelegram, shall be shown before the address. When it has not been possible for a land station to transmit a radiotelegram bearing the service indication **Jx** within the prescribed period, the land station treats the radiotelegram as undelivered and informs the sender accordingly.
- B45 4.5.3 (Spare).
- B46 4.5.4 The periods mentioned in B43 and B44 shall be ignored if the land station is sure that the mobile station will soon come within its service area.
- B47 4.5.5 On the other hand, the lapse of those periods is not awaited when the land station is sure that the mobile station, being in course of a voyage, either has definitely left its service area or will not enter it.
- B48 4.5.6 If there is reason to believe that no other land station of the Administration to which it is subject is or will be in touch with it, the land station cancels the radiotelegram as far as concerns the section between itself and the mobile station and informs the office of origin, which notifies the sender.
- B49 4.5.7 In the contrary case, the land station forwards the radiotelegram to the land station believed to be in touch with the mobile station, provided, however, that no additional charge results therefrom.
- B50 4.5.8 The land station that carries out the redirection alters the address of the radiotelegram by placing after the name of the mobile station that of the new land station charged with the transmission and adding at the end of the preamble line the service instruction **REDIRECTED FROM ... RADIO**, which must be transmitted throughout the course of the radiotelegram.
- B51 4.5.9 If, within the limits of the requisite period of retention of radiotelegrams, the land station that has redirected a radiotelegram to another land station is subsequently in a position to transmit the radiotelegram direct to the destination mobile station, it does so by inserting the service instruction **AMPLIATION** at the end of the preamble line.
- B52 4.5.10 It shall then transmit to the land station to which the radiotelegram had been redirected a service advice informing the latter of the transmission of the said radiotelegram.
- B53 4.5.11 When a radiotelegram cannot be transmitted to a mobile station owing to the arrival of the latter in a port near the land station, the latter station may, according to circumstances, forward the radiotelegram to the mobile station by other means of communication, at the same time informing the office of origin by service advice of the delivery.
- B54 4.5.12 (Spare).

5 Advice of nondelivery

- B55 5.1 When, for any reason, a radiotelegram originating in a mobile station and destined for a place on land cannot be delivered to the addressee, an advice of non-delivery is addressed to the land station or the telegraph office that received the radiotelegram.
- B56 5.2 After checking the address, the land station forwards the advice, when possible, to the mobile station, if necessary by way of another land station of the same country or of a neighbouring country, as far as existing conditions or special agreements permit.
- B57 5.3 When a radiotelegram received at a mobile station cannot be delivered, that station so informs the office or mobile station of origin by a service advice.
- B58 5.4 In the case of a radiotelegram originating on land, this service advice is sent, whenever possible, to the land station through which the radiotelegram passed, or, if necessary, to another land station of the same country or of a neighbouring country, as far as existing conditions or special arrangements permit.
- B59 5.5 In such cases the name or call sign of the station from which the radiotelegram was received is quoted.

6 Radiomaritime letters

- B60 6.1 Each Administration may organize a service of radiomaritime letters between mobile stations and its land stations.
- B61 6.2 Such correspondence is transmitted by radio between the mobile and the land stations.
- B62 6.3 They may be forwarded on the land section:
- B63 a) wholly or partly by post (ordinary or airmail);
- B64 b) exceptionally by telegraph, in which case delivery is subject to the periods of delay fixed for letter telegrams.
- B65 6.4 Radio retransmission of radiomaritime letters is not permitted in the mobile service.
- B66 6.5 Radiomaritime letters shall be addressed only to places in the country in which the land station is situated, unless it is indicated in the *List of Coast Stations* [6] that the station concerned will accept such traffic for onward transmission by post to places in other countries.
- B67 6.6 Radiomaritime letters bear the service indication SLT. This indication precedes the address.
- B68 6.7 Except as otherwise provided in B60 to B70, radiomaritime letters may be accepted, taking into account CCITT Recommendations relating to letter telegrams, if the telegram service is used to convey radiomaritime letters.
- B69 6.8 The address must enable delivery to be effected without enquiry or requests for information. Registered or abbreviated addresses are admitted when, exceptionally, radiomaritime letters are forwarded telegraphically on the land section.
- B70 6.9 Radiomaritime letters rank, for radio transmission, after ordinary radiotelegrams on hand. Those that have not been transmitted within 24 hours of handing-in are sent concurrently with ordinary radiotelegrams.

7 Special services

- B71 7.1 Telegrams with special services are admitted, provided that the Administrations concerned accept them.
- B72 7.2 Refer to Recommendation F.1, A266 to A274 for the provisions concerning special services that may be applied for telegrams.

8 Special conditions relating to the Maritime Mobile-Satellite Service

- B73 8.1 In the Maritime Mobile-Satellite Service the transmission of radiotelegrams should normally be permitted by radiotelex only.
- B74 8.2 The radiotelegram service in B73 should be arranged in such a way that automatic retransmission is possible.

DIVISION C

RADIOTELEX

1 General

1.1 *Routing of calls*

- C1 1.1.1 A radiotelex call should be set up via the land station that is considered most suitable in relation to the mobile station concerned.
- C2 1.1.2 For radiotelex calls in the direction land station to mobile station, the caller should give the geographical position if possible and may also indicate the land station to be used. Such requests should be respected as far as is practicable.
- C3 1.1.3 For radiotelex calls in the direction mobile station to land station, the mobile station shall call the land station it desires to use. The land station shall either handle the call itself or advise the mobile station to use another land station that is more suitable to the mobile station.

1.2 *Information to be supplied, as necessary, by the calling party*

- C4 1.2.1 Calls to a mobile station:
- a) telex number and/or answer-back code of the calling subscriber;
 - b) telex number of the mobile station;
 - c) name or call sign of the mobile station;
 - d) telex number and/or name of the land station to be used, or the approximate geographical position of the mobile station.
- C5 1.2.2 Calls from a mobile station:
- a) telex number of the mobile station;
 - b) the *accounting authority identification code (AAIC)* in the single-operator or manual service (see Annex A to Recommendation D.90);
 - c) destination country and/or network;
 - d) called subscriber's telex number and/or answer-back code.

1.3 *Call duration*

- C6 1.3.1 The chargeable duration of a call will be fixed at the end of the call:
- a) in the direction from mobile station by the controlling operator;
 - b) in the direction to mobile stations:
 - by the land station operator in manual and single-operator service;
 - by the operator of the international position of the outgoing country in the semiautomatic service.
- C7 1.3.2 If two land stations participate in the handling of the call, the opinion of the land station that has accepted the call from the originating mobile station shall prevail.
- C8 1.3.3 When, through any fault of the service, difficulty is experienced in the course of a call, the chargeable duration shall be reduced automatically or manually to the total time during which transmission conditions were satisfactory, taking into account CCITT Recommendations (F.60 and F.61).

1.4 *Validity of requests*

- C9 1.4.1 If it becomes obvious that the required mobile station cannot be reached by the land station, the caller should be informed as soon as possible in order to have the opportunity to have the call cancelled if required. In any event, the caller should be informed no later than in the morning of the second day following the day on which the call request was made.
- C10 1.4.2 In an automatic service any information concerning the failure to set up a call shall be sent back to the calling subscriber. The standardized expressions and abbreviations will be used to account for this failure. The period of validity for store and forward calls in the automatic service shall be as in Recommendation F.72.

1.5 *Exchange of radiotelegrams by radiotelex*

- C11 1.5.1 Stations of the Maritime Mobile Service that are equipped for radiotelex may transmit and receive radiotelegrams by means of radiotelex.
- C12 1.5.2 Stations of the Maritime Mobile-Satellite Service should normally transmit and receive radiotelegrams by means of radiotelex only.

2 **Traffic from mobile stations**

2.1 *Automatic service*

- C13 2.1.1 Whenever possible, automatic procedures should be used; i.e. the calling subscriber should contact the called subscriber directly without the aid of an operator.
- C14 2.1.2 After connection with the desired land station is established, the mobile station should select directly the appropriate telex destination code (Recommendation F.69) and the number of the subscriber of an Administration's telex network.

2.2 *Single-operator service*

- C15 2.2.1 The land station operator selects the called subscriber directly via the automatic telex network if automatic procedures (C13) are not possible.

2.3 *Semiautomatic service*

- C16 2.3.1 The telex operator of the international exchange of the land station country selects the called subscriber directly if automatic procedures (C13) or single-operator procedures (C15) cannot be applied.

2.4 *Manual service*

- C17 2.4.1 The land station operator applies manual procedures if automatic (C13), single-operator (C15) or semiautomatic (C16) procedures are not possible.

2.5 *Store-and-forward service*

- C17A 2.5.1 The mobile station transmits the message to the land station using automatic procedures, and the land station retransmits the message over the designated land network.
- C17B 2.5.2 The manual semi-automatic and automatic procedures for store and forward in the terrestrial telex network, as laid down in Recommendations F.72, U.80 and U.81, should be taken into account.

2.6 Procedures

- C18 2.6.1 The manual, semiautomatic and automatic procedures for the terrestrial telex network, as laid down in Recommendations F.60 and F.61, should be taken into account.

3 Traffic to mobile stations

3.1 Automatic procedure (*direct access by the calling subscriber to the called subscriber*)

- C19 3.1.1 Whenever possible automatic procedures should be used; i.e. the calling subscriber should contact the called subscriber directly without the aid of an operator.
- C20 3.1.2 The subscriber of an Administration's telex network should select the appropriate address code, including the mobile station number, and if necessary the ocean area number, to connect him through a land station with which his Administration has established routing of maritime traffic for the ocean area desired.
- C21 3.1.3 If the subscriber, for some technical reason, cannot establish contact with the mobile station directly, semiautomatic (C35) or single-operator (C24) procedures should be used.
- C22 3.1.4 On international telex links a destination code will be used in accordance with Recommendation F.69, unless otherwise agreed bilaterally.
- C23 3.1.5 Once a call has been established (indicated by an exchange of answer-backs), the subscriber should start a new line before sending his message (Recommendation F.60, § A.2.2 refers).

3.2 Single-operator procedure (*direct access by the calling subscriber to a foreign land station*)

3.2.1 Booking

- C24 3.2.1.1 If automatic working (C19) is not possible the subscriber selects the foreign land station in question using automatic direct selection and submits the call details to the land station operator.
- C25 3.2.1.2 Where an Administration permits its subscribers to book a call directly with a land station in another country, the charges set by the land station must be levied by the calling subscriber's Administration.
- C26 3.2.1.3 In addition to the information in C4, the calling subscriber must designate his national telex network.
- C27 3.2.1.4 As an alternative to C25 and C26, land stations may accept direct calls from foreign subscribers provided that the calling subscriber supplies the name and address of a party in the land station's country that will take responsibility for the payment of charges.
- C28 3.2.1.5 The procedures described in C25 and C27 may only be applied when an appropriate bilateral agreement exists between the two Administrations concerned. If such an agreement does not exist, the land station should refuse such calls to avoid accounting difficulties.
- C29 3.2.1.6 In C24 and C27 above, the call to the foreign land station will be charged as an ordinary international telex call for its entire duration, regardless of whether it merely serves the purpose of booking the radiotelex call or whether the land station can extend the connection to the mobile station without having to recall the originating subscriber.

3.2.2 Setting-up

- C30 3.2.2.1 When demand operation cannot be used, the caller will be disconnected until the mobile station is available. The land station operator then recalls the caller using automatic direct selection; the land station's country being considered as the outgoing country for the call.

- C31 3.2.2.2 In case C30, the land station includes in the bill:
- a) the landline charge;
 - b) the land station charge.
- C32 3.2.2.3 When demand operation has been used, the bill made out by the land station operator includes only:
- the land station charge.
- C33 3.2.2.4 All information regarding collection of charges for single-operator calls (see C15) should be submitted by the land station Administration on a regular basis to be determined by the Administrations involved.
- C34 3.2.2.5 The methods to be used in collecting the charges are described in Recommendation D.90.

3.3 *Semiautomatic procedure (access by the calling subscriber to his international exchange for the establishment of a direct connection)*

- C35 3.3.1 If automatic (C19) or single-operator (C24) procedures are not possible, the telex operator of the international exchange of the outgoing country receives the booking and selects the mobile station directly. The procedures of Recommendation F.60, § 3.3 shall be applied.

3.4 *Manual procedure*

3.4.1 *Booking*

- C36 3.4.1.1 If automatic (C19), single-operator (C24) or semiautomatic (C35) procedures are not possible, the subscriber should make his booking at the international telex centre of the outgoing country or network.
- C37 3.4.1.2 If conditions permit, the international telex position should select the foreign land station in question directly. Otherwise the international telex position of the land station country should be selected to give the necessary assistance to obtain contact with the land station in question.

3.4.2 *Setting-up*

- C38 3.4.2.1 The land station operator obtains the caller directly or with the assistance of his own international telex position, which selects the caller. Otherwise he selects his own international telex position in order to be connected to the international telex position of the outgoing country, which then selects the caller.
- C39 3.4.2.2 Within 24 hours of the call's termination, the land station shall pass the following information to the international telex centre of the origin country, where it is recorded for charging and accounting purposes:
- a) the calling subscriber's telex number;
 - b) the mobile station's call sign;
 - c) the chargeable duration of the call;
 - d) the land station charge to be collected.

3.5 *Store-and-forward*

- C39A 3.5.1 The subscriber uses two stage selection, calling the land station desired and storing the message for retransmission to the mobile station.

4 Radiomaritime telex letter

4.1 Definition

- C40 4.1.1 **radiomaritime telex letter:** A message sent by telex direct from a mobile station to a selected land station or to a selected public telegraph office for delivery by mail or any other appropriate means.

4.2 Operational procedures

- C41 4.2.1 A ship subscriber will select the access code allocated for the radiomaritime telex letter service, or the access code allocated for the fully automatic telex service (see Recommendation F.126) followed, if appropriate, by the telex number of the telegraph office.
- C42 4.2.2 The ship operator shall supply the following information:
- a) telex number of the mobile station (as provided in Recommendation F.125),
 - b) AAIC,
 - c) addressee's name and address,
 - d) words "RADIOMARITIME TELEX LETTER".

DIVISION D

RADIOTELEPHONE

1 General

1.1 *Language to be used*

- D1 1.1.1 Where applicable and where language difficulties exist, the abbreviations and signals in Appendix 14 of the *Radio Regulations* [3] and the *Phonetic Alphabet and Figure Code* in Appendix 24 of the *Radio Regulations* should be used in radiotelephone communications between land stations and mobile stations.

1.2 *Priority*

- D2 1.2.1 Apart from the general order of priority shown in A21 to A32, radiotelephone calls shall have precedence, so far as possible, over other telephone calls of the same class.

1.3 *Routing of calls*

- D3 1.3.1 A radiotelephone call should be set up via the land station that is considered most suitable in relation to the mobile station concerned.
- D4 1.3.2 For radiotelephone calls in the direction land station to mobile station, the caller should give the geographical position if possible and may also indicate the land station to be used. Such requests should be respected as far as is practicable.
- D5 1.3.3 For radiotelephone calls in the direction mobile station to land station, the mobile station shall call the land station it desires to use. The land station shall either handle the call itself or advise the mobile station to use another land station that is more suitable to the mobile station.

1.4 *Information to be supplied by the calling party*

- D6 1.4.1 Calls to a mobile station:
- a) complete telephone number of the calling subscriber;
 - b) appropriate identification of the mobile station;
 - c) name of the land station to be used or the approximate geographical position of the mobile station;
 - d) name of the called party, if applicable. All calls to mobile stations in the maritime mobile service are treated as personal calls, with the possible exception of the Maritime Mobile-Satellite Service.
- D7 1.4.2 Calls from a mobile station:
- a) appropriate identification of the mobile station;
 - b) the *accounting authority identification code (AAIC)* in the single-operator or manual service (see Annex A to Recommendation D.90);
 - c) the information specified in Article 60 of the *Instructions for the International Telephone Service* [7].

1.5 *Call duration*

- D8 1.5.1 The chargeable duration of a call will be fixed at the end of the call:
- a) in the direction from the mobile stations by the controlling operator;
 - b) in the direction to mobile stations;
 - by the land station operator in manual and single-operator service;
 - by the operator of the international centre of the outgoing country in the semiautomatic service.
- D9 1.5.2 If two land stations participate in the handling of the call, the opinion of the land station that has accepted the call from the originating mobile station shall prevail.
- D10 1.5.3 When, through any fault of the service, difficulty is experienced in the course of a call, the chargeable duration shall be reduced automatically or manually to the total time during which transmission conditions were satisfactory, taking into account CCITT Recommendations.

1.6 *Validity of requests*

- D11 1.6.1 If not cancelled by the caller or refused by the addressee, requests for calls from land to mobile stations:
- a) in the VHF and MF bands shall remain valid until 0800 local time on the day following the day on which the request was made;
 - b) in the HF band shall remain valid until 0800 local time on the second day following the day on which the request was made.
- D12 1.6.2 However, if it becomes obvious that the required mobile station is outside the coverage area of the land station, the caller shall be informed as soon as possible in order to have the call cancelled.
- D13 1.6.3 All requests for calls from mobile stations to land shall be cancelled where the call is not immediately attended to or on completion of the successive attempts provided for by the rules of each Administration, unless there has been an express request to the contrary by the calling mobile station, which shall be able to determine the waiting period for listening in on the land station frequency with a view to making a further attempt to set up the call.

1.7 *Exchange of radiotelegrams by radiotelephony*

- D14 1.7.1 Stations of the Maritime Mobile Service that are equipped for radiotelephony may transmit and receive radiotelegrams by means of radiotelephony. Stations of the Maritime Mobile-Satellite Service should normally transmit and receive radiotelegrams by means of radiotelex only.

2 **Traffic from mobile stations**

2.1 *Automatic service*

- D15 2.1.1 Whenever possible, automatic procedures should be used; i.e. the calling subscriber should contact the called subscriber directly without the aid of an operator.
- D16 2.1.2 After connection with the desired land station is established, the mobile station should select directly the appropriate telephone country code (Recommendation E.163) and the number of the subscriber of an Administration's telephone network.

2.2 *Single-operator service*

- D17 2.2.1 The land station operator selects the called subscriber directly via the automatic telephone networks if automatic working (D15) is not possible.

2.3 *Semiautomatic service*

- D18 2.3.1 The telephone operator of the international exchange of the land station country selects the called subscriber directly if automatic (D15) or single-operator (D17) procedures cannot be applied.

2.4 *Manual service*

- D19 2.4.1 The land station operator applies manual procedures if automatic (D15), single-operator (D17) or semiautomatic (D18) working is not possible.

2.5 *Store-and-forward service*

- D19A 2.5.1 The mobile station transmits the message to the land station using automatic procedures, and the land station retransmits the message over the designated land network.
- D19B 2.5.2 The manual semi-automatic and automatic procedures for store and forward in the terrestrial telex network, as laid down in Recommendations F.72, U.80 and U.81, should be taken into account.

2.6 *Procedures*

- D20 2.6.1 The automatic, semiautomatic and manual procedures for the terrestrial telephone network, as laid down in Recommendation E.141 and the *Instructions for the International Telephone Service* [7] should be taken into account.

3 **Traffic to mobile stations**

3.1. *Automatic procedure (direct access by the calling subscriber to the called subscriber)*

- D21 3.1.1 Whenever possible, automatic procedures should be used; i.e. the calling subscriber should contact the called subscriber directly without the aid of an operator.
- D22 3.1.2 The subscriber of an Administration's telephone network should select the appropriate address code, including the mobile station number and if necessary the ocean area number, to connect him through a land station with which his Administration has established routing of maritime traffic for the ocean area desired.
- D23 3.1.3 If the subscriber, for some technical reason, cannot establish contact with the mobile station directly, single-operator (D24) procedures should be used.

3.2 *Single-operator procedure (direct access by the calling subscriber to a foreign land station)*

3.2.1 *Booking*

- D24 3.2.1.1 If automatic procedures cannot be applied, the subscriber selects the foreign land station in question using automatic direct selection. The land station operator records the call details.
- D25 3.2.1.2 Where an Administration permits its subscribers to book a call directly with a land station in another country, the charges set by the land station must be levied by the calling subscriber's Administration.
- D26 3.2.1.3 In addition to the information in D6, the calling subscriber must designate his country and national telephone number.
- D27 3.2.1.4 As an alternative to D24 and D25, land stations may accept direct calls from foreign subscribers provided that the calling subscriber supplies the name and address of a party in the land station's country that will take responsibility for the payment of charges.

- D28 3.2.1.5 The procedures described in D25 and D27 may only be applied when an appropriate bilateral agreement exists between the two Administrations concerned. If such an agreement does not exist, the land station should refuse such calls to avoid accounting difficulties.
- D29 3.2.1.6 In D24 and D27 above, the call to the foreign land station will be charged as an ordinary international telephone call for its entire duration, regardless of whether it merely serves the purpose of booking the radiotelephone call or whether the land station can extend the connection to the mobile station without having to recall the originating subscriber.

3.2.2 *Setting-up*

- D30 3.2.2.1 When demand operation cannot be used, the caller will be disconnected until the mobile station is available. The land station operator then recalls the caller using automatic direct selection, the land station country being considered as the outgoing country for the call.
- D31 3.2.2.2 In case D30, the land station includes in the bill:
- a) the landline charge;
 - b) the land station charge.
- D32 3.2.2.3 When demand operation has been used, the bill made out by the land station operator includes only:
- the land station charge.
- D33 3.2.2.4 All information regarding collection of charges for single-operator calls (see D17) should be submitted by the land station Administration on a regular basis to be determined by the Administrations involved.
- D34 3.2.2.5 The methods to be used in collecting the charges are described in Recommendation D.90.

3.3 *Semiautomatic procedure (access by the calling subscriber to his international exchange for the establishment of a direct connection)*

- D35 3.3.1 If automatic (D21) or single-operator (D24) procedures are not possible, the telephone operator of the international exchange of the outgoing country receives the booking and selects the mobile station directly. Normal international semiautomatic telephone procedures shall be applied.

3.4 *Manual procedure*

3.4.1 *Booking*

- D36 3.4.1.1 If automatic (D21), single-operator (D24) or semiautomatic (D35) procedures cannot be applied, the subscriber should make his booking at the international centre of the outgoing country.
- D37 3.4.1.2 If conditions permit, the international position should select the foreign land station in question directly. Otherwise the international position of the land station country should be selected to give the necessary assistance to obtain contact with the land station in question.

3.4.2 *Setting-up*

- D38 3.4.2.1 The land station operator obtains the caller directly or with the assistance of his own international telephone centre, which selects the caller. Otherwise he selects his own international telephone centre in order to be connected to the international telephone centre of the outgoing country, which then selects the caller.

- D39 3.4.2.2 After the call's termination, the land station shall pass the following information to the international telephone centre of the country of origin, where it is recorded for charging and accounting purposes:
- a) the calling subscriber's telephone number;
 - b) the mobile station's name and/or call sign;
 - c) the chargeable duration of the call;
 - d) the land station charge to be collected;
- D40 3.4.2.3 Otherwise all information regarding collection of charges should be submitted to the caller's Administration on a regular basis to be determined by the Administrations involved.

3.5 *Store-and-forward procedures*

- D40A 3.5.1 The subscriber uses two stage selection, calling the land station desired and storing the message for retransmission to the mobile station.

DIVISION E

RADIOTELEXOGRAM

1 General

1.1 Definition

- E1 1.1.1 A radiotelexogram is a message sent by telex direct from a subscriber to a foreign land station for transmission to a mobile station or a message sent from a mobile station to a land station for transmission by telex direct to a foreign subscriber (see Note in E.5).

1.2 Provision of service

- E2 1.2.1 Operating, charging and accounting procedures should be subject to bilateral agreement between the Administrations concerned. If such an agreement does not exist, the land station should refuse such radiotelexograms in the shore-to-ship direction.
- E3 1.2.2 Alternatively, land stations may accept radiotelexograms from foreign subscribers provided that the calling subscriber supplies the name and address of a party in the land station country that will take responsibility for the payment of charges.

1.3 Validity of requests

- E4 1.3.1 If it becomes obvious that the required mobile station is outside the coverage area of the land station, the caller shall be informed as soon as possible in order to have the radiotelexogram cancelled.

2 Operational procedures

- E5 2.1 The transmission of radiotelexograms should be in accordance with Divisions B and C as appropriate except as specified below or where varied through bilateral agreement.

Note — A radiotelexogram is different from a radiotelex call. In particular, a radiotelexogram is normally transmitted between the mobile station and the land station as a radiotelexogram by Morse telegraphy or by radiotelephony.

- E6 2.2 *Information to be supplied to the land station, as necessary, by the calling party*

- E7 2.2.1 *Radiotelexogram to a mobile station*

- a) telex number and/or answerback code of the calling subscriber;
- b) the national telex network to which the subscriber belongs;
- c) the date and time of origin;
- d) the word RADIOTELEXOGRAM;
- e) name or designation of the addressee with supplementary particulars if necessary;
- f) the name of the mobile station followed, when necessary, by its call sign or where this is not known, the particulars of the passage made by the mobile station;
- g) any specific delivery instructions.

- E8 2.2.2 *Radiotelexogram from a mobile station*

- a) name and/or call sign of the mobile station;
- b) identification of the accounting authority;
- c) the date and time of origin;
- d) the word RADIOTELEXOGRAM;
- e) destination country and/or network;
- f) called subscriber's telex number and answerback code.

References

- [1] *Final Acts of the World Administrative Maritime Radio Conference*, ITU, Geneva, 1974.
- [2] *Final Acts of the World Administrative Radio Conference (WARC)*, ITU, Geneva, 1979.
- [3] *Radio Regulations*, ITU, Geneva, 1982.
- [4] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973.
- [5] *List of ship stations*, ITU, Geneva, 1987.
- [6] *List of coast stations*, ITU, Geneva, 1986.
- [7] *Instructions for the international telephone service, (1st October 1985)*, ITU, Geneva, 1985.

Recommendation F.112

QUALITY OBJECTIVES FOR 50-BAUD START-STOP TELEGRAPH TRANSMISSION IN THE MARITIME MOBILE-SATELLITE SERVICE

The CCITT,

considering

- (a) that proper interworking of this telegraph transmission with the international telegraph services must be ensured;
- (b) CCITT Recommendation F.10 concerning character error rate for telegraph communications,

unanimously recommends

that, for the coast-earth station-to-mobile terminal and mobile terminal-to-coast-earth station links, sufficient margin should be included to overcome adverse propagation conditions. The objective should be that propagation conditions should not contribute any character errors for at least 95% of all calls with mobile terminals within the satellite service area. With the exception of blockage effects, propagation conditions should not contribute more than 8 errors in 100 000 characters with a 99% confidence level for mobile terminals at the edge of the service area.

Note — This Recommendation corresponds to CCIR Recommendation 552.

Recommendation F.120¹⁾

SHIP STATION IDENTIFICATION FOR VHF/UHF AND MARITIME MOBILE-SATELLITE SERVICES

1 Introduction

1.1 The purpose of this Recommendation is to specify a method by which an internationally unique ship station identification may be assigned to all the ships participating in the Maritime Mobile Services.

¹⁾ This Recommendation is also included in the E and Q Series as Recommendations E.210 and Q.11 *ter*.

1.2 Terminology

The following terms are used in this Recommendation:

1.2.1 Maritime Mobile (Terrestrial) Service

F: service mobile maritime (de Terre)

S: servicio móvil marítimo (terrenal)

Conventional Maritime Mobile Services such as the HF Maritime Service, the MF Maritime Service and the VHF Maritime Service (as defined in the *Radio Regulations* [1]).

Maritime Mobile-Satellite Service

F: service mobile maritime par satellite

S: servicio móvil marítimo por satélite

As defined in the *Radio Regulations* [1].

1.2.2 coast station

F: station côtière

S: estación costera

A land station in the Maritime Mobile Service.

coast earth station

F: station terrienne côtière

S: estación terrena costera

An earth station in the Fixed-Satellite Service or, in some cases, in the Maritime Mobile-Satellite Service, located at a specified fixed point on land to provide a feeder link for the Maritime Mobile-Satellite Service.

Note — In this Recommendation the term coast station is also intended to include, for simplicity, coast earth station.

1.2.3 ship station identity

F: identité de la station de navire

S: identidad de estación de barco

The ship's identification $X_1, X_2 \dots X_k$ identifying the ship uniquely. The ship station identity may be transmitted on the radio path.

ship station number

F: numéro de station de navire

S: número de estación de barco

The number that identifies a ship for access from a public network and forms part of the international number to be dialled or keyed by a public network subscriber.

Note 1 — The formats of the ship station number are defined in other E and F Series Recommendations:

- Recommendation E.215 for telephone and ISDN numbering in the Maritime Mobile-Satellite Service;
- Recommendation F.125 for telex numbering in the Maritime Mobile-Satellite Service;
- numbering plans for maritime mobile (terrestrial) systems are for further study.

Note 2 — In this Recommendation the term ship station is intended to also include, for simplicity, ship earth station.

1.2.4 coast station identity

F: identité de la station côtière

S: identidad de estación costera

The coast station identification $X_1, X_2 \dots X_k$ transmitted on the radio path.

Note — In this Recommendation the term coast station identity is intended to also include, for simplicity, coast earth station identity.

1.3 Basic considerations

The considerations that form the basis of this ship station identification system are:

- a) that every ship shall have a unique ship station identity;
- b) that the same unique ship station identity should be used in both VHF/UHF and Maritime Mobile-Satellite Systems;
- c) that the same unique ship station identity should be used for all telecommunication services;
- d) that it is desirable that the ship station number and the ship station identity are related in a simple and unambiguous manner;
- e) that the capacity of the ship station identification system shall be sufficient to admit all ships wanting, or required, to participate in the various Maritime Mobile Services at present and in the foreseeable future;
- f) that the ship identity system shall be a numerical system, and should use the full range of decimal digits;
- g) that two or three of the digits, $X_1X_2X_3$, of the ship station identity shall indicate the ship's nationality.

2 Ship station identification

Ship station identity is established as nine digits.

$$X_1X_2X_3X_4X_5X_6X_7X_8X_9$$

The initial three digits define the nationality of the ship as indicated in the following sections.

Since the whole or a part of the ship station identity is used in the ship station number, certain restrictions may be imposed on the allocation of ship station identities for the Maritime Mobile-Satellite Service. Such restrictions are identified in Recommendations E.215 and F.125. The use of the ship station identity in maritime mobile (terrestrial) systems is for further study.

3 Assignment of ship station identification

3.1 Assignment of blocks of numbers

Blocks of numbers should be assigned to countries so that individual Administrations may systematically assign ship station identities within those blocks.

3.2 Identification of ship's geographical region

The first digit of each ship station identity is intended to identify the geographical region to which the nationality (registry) of the ship relates. Only the digits 2 through 7 are used for this purpose to identify easily the world's regions as follows:

- 2 — Europe
- 3 — North America
- 4 — Asia (except Southeast Asia)
- 5 — Oceania and Southeast Asia
- 6 — Africa
- 7 — South America.

Arrangements may therefore be made to systematically assign a ship station identity to each ship as soon as national blocks are allocated. The digits zero (0), one (1), eight (8) and nine (9) are allocated for other purposes as indicated below.

The digits eight (8) and nine (9) are not used for identification of geographical regions. However, for maritime VHF/UHF systems, the digits 8 and 9 may be used to expand network access as shown in § 8.2. The allocation of the first digit of the ship station identity is summarized in Table 1/F.120.

TABLE 1/F.120
Allocations of first digit (X₁) in the ship station identity

First digit (X ₁) of ship station identity	Use
0	Group call/coast station identity
1	Reserved for future expansion
2	Europe
3	North America
4	Asia (except Southeast Asia)
5	Oceania and Southeast Asia
6	Africa
7	South America
8	See § 8.2
9	See § 8.2

3.3 Identification of ship's nationality

Since blocks of the ship station identities would be systematically assigned by country, a ship's nationality can be determined by analysing the first three digits of its ship station identity.

The digits to be analysed are called Maritime Identification Digits (MID). Examples of the maritime identification digits for ships are given in Table 2/F.120.

TABLE 2/F.120

Country	Maritime identifications digits (MID)	Ship station identity
P	231	from 231 000 000 to 231 999 999
Q	233, 234	from 233 000 000 to 234 999 999
R	236, 237, 238	from 236 000 000 to 238 999 999
S	240 to 249	from 240 000 000 to 249 999 999

4 **Assignment of maritime identification digits**

Each MID represents a discrete capacity assigned according to a plan that relates assigned capacity to ship population. A plan has been developed by the World Administrative Radio Conference for the Mobile Services (MOB-83) [2] and is contained in Appendix 43 to the *Radio Regulations* [1]. The Radio Regulations make provision for the allocation of additional MIDs for a specific country when necessary.

5 **Group calls**

$X_1 = 0$, $X_2 = 1$ to 9 and $X_1 = 0$, $X_2 = 0$, $X_3 = 0$, $X_4 = 0$ to 9 are assigned to indicate a group call to a group of ships having a community of interest. Such calls may be barred in the public switched network and/or at the coast stations. Control of group calls may also be achieved by the use of special group service access to the coast stations. The group call numbering scheme used in the INMARSAT system is given in Annex B to Recommendation E.215 and in Annex B to Recommendation F.125.

6 **Coast station identity**

$X_1 = 0$, $X_2 = 0$, $X_3 = 1$ to 9 are assigned to indicate coast station identities in maritime mobile (terrestrial) systems.

7 **Future expansion of the ship station identification system**

$X_1 = 1$ as in the format 1 XXXXXXXXX has been reserved for future expansion.

Note – $X_1 = 1$ is used in the INMARSAT standard A system for identification of ship earth stations (see Recommendations F.125 and E.215).

8 **Considerations related to ship station identity assignment**

8.1 The ship station identity, or part of it, will be included in the INMARSAT mobile number. The way in which this is done for INMARSAT mobile numbers is described in Recommendations E.215 and F.125.

The relationship between the nine-digit ship station identity and the part of it which is used in the ship station number is illustrated in Table 3/F.120. If the part of the identity used in the number is shorter than nine digits, then the corresponding identity is obtained by adding trailing zeros to form nine-digit ship station identities. This principle must be observed when allocating ship station identities for ships in the Maritime Mobile-Satellite Service (see Recommendations E.215 and F.125).

TABLE 3/F.120

Part of ship station identity used in ship station number	Digits on the automatic network	Ship stations identity	Digits in the ship station identity
MID $X_4X_5X_6$	6	MID $X_4X_5X_6$ 000	9
MID $X_4X_5X_6X_7$	7	MID $X_4X_5X_6X_7$ 00	9
MID $X_4X_5X_6X_7X_8$	8	MID $X_4X_5X_6X_7X_8$ 0	9
MID $X_4X_5X_6X_7X_8X_9$	9	MID $X_4X_5X_6X_7X_8X_9$	9

8.2 Numbering plans for the maritime mobile (terrestrial) services are for further study. The principle of § 8.1 is likely to apply for these services also.

For maritime mobile (terrestrial) services, additional ship station numbering techniques may be used to expand network access to more ship stations on a regional and national basis as follows:

Ship station number
(or part thereof)

8Y $X_4X_5X_6X_7$
9 $X_4X_5X_6X_7X_8$

Ship station identity

$M_yI_yD_y$ $X_4X_5X_6X_7$ 00
 $M_nI_nD_n$ $X_4X_5X_6X_7X_8$ 0

In this arrangement, the digits 8Y may be 80 to 89 to define as many as ten foreign MIDs (shown as $M_y I_y D_y$) to permit automatic calling of ships of particular nationalities. The coast station would be required to translate a given 8Y to a particular foreign MID. The digit 9 may be used to indicate the maritime identification digits for ships of the same nationality as the network and the coast station. The coast station would be required to translate 9 to one particular national MID (shown as $M_n I_n D_n$).

References

- [1] *Radio Regulations*, ITU, Geneva, 1982, revised in 1985, 1986 and 1988.
- [2] *Final Acts of the World Administrative Radio Conference for the Mobile Services* (MOB-83), ITU, Geneva, 1983.

Recommendation F.122

OPERATIONAL PROCEDURES FOR THE MARITIME SATELLITE DATA TRANSMISSION SERVICE

1 Introduction

1.1 The purpose of this Recommendation is:

- a) to standardize the procedures for subscribers of a public data network (PDN) calling ship earth stations in the Maritime Satellite Data Transmission Service;
- b) to standardize the procedures for calling subscribers of a PDN from ship earth stations using the packet switched data transmission service defined in Recommendations X.25 and X.352;
- c) to standardize the procedures for calling subscribers of a PDN from ship earth stations by accessing packet assembly/disassembly facilities (PAD) as defined in Recommendation X.351.

Note 1 – This Recommendation does not cover data calls passed through the international public switched telephone network other than those which are accessed through PADs designed in accordance with Recommendation X.351.

Note 2 – Procedures for subscribers of a PDN calling a ship earth station by accessing a PAD are for further study.

1.2 Related CCITT Recommendations are:

- E.200/F.110 Operational provisions for the maritime mobile service.
- E.210/F.120 Ship station identification for VHF/UHF and Maritime Mobile-Satellite Services.
- E.215 Telephone/ISDN numbering plan for the Mobile-Satellite Service of INMARSAT.
- E.216 Selection procedure for the INMARSAT mobile-satellite telephone and ISDN services.
- F.125 Telex numbering plan for the Mobile-Satellite Service of INMARSAT.
- F.126 Selection procedures for the INMARSAT Mobile-Satellite Telex Service.
- X.1 International user classes of service in public data networks and ISDNs.
- X.2 International data transmission services and optional user facilities in public data networks.
- X.96 Call progress signals in public data networks.
- X.121 International numbering plan for public data networks.
- X.180 Administrative arrangements for international closed user groups (CUGs).
- X.300 General principles and arrangements for interworking between public data networks, and between public data networks and other public networks.

- X.350 General interworking requirements to be met for data transmission in the international public mobile satellite systems.
- X.351 Special requirements to be met for packet assembly/disassembly facilities (PADs) located at or in association with coast earth stations in the Maritime Satellite Service.
- X.352 Interworking between packet switched public data networks and the public maritime mobile satellite data transmission system.
- X.353 Routing principles for interworking public maritime mobile satellite data transmission systems in the public data network.

1.3 The following basic considerations were taken into account when formulating this Recommendation:

- a) Each ship is allocated a unique 9-digit INMARSAT mobile number.
Note – The *first generation* maritime mobile satellite (INMARSAT) system also caters for a 7-digit INMARSAT mobile number beginning with digit 1.
- b) The routing principles to be used for data transmission to and from ships are as defined in Recommendation X.353.
- c) The procedures to be used on board ships when accessing a subscriber of a PDN should be as similar as possible to the procedures used on PDNs.
- d) The Maritime Satellite Service is international in nature and international procedures will be adopted to provide access to this service. For some purposes, a maritime satellite data transmission system can be regarded as analogous to a national network and the ship earth stations as subscribers within that network.
- e) The procedures used on board the ship when accessing a subscriber of a PDN should be the same in all coast earth stations.

1.4 The following basic access methods are defined for the Maritime Satellite Data Transmission Service:

- a) access using the packet mode in accordance with draft Recommendation X.352;
- b) access using packet assembly/disassembly facilities (PADs) in accordance with Recommendation X.351.

1.5 Ships may form part of a closed user group (CUG) in accordance with Recommendation X.180. It should be noted that a ship being part of a CUG should be known as such in all coast earth stations.

The International Maritime Satellite Organization (INMARSAT) should be charged with the responsibility of acting as the coordinating Administration (see Recommendation X.180) for ship earth stations wanting to form CUGs. The application from ships to join or cease membership of a CUG should be forwarded through INMARSAT who should then inform the coordinating Administration of the CUG in accordance with Recommendation X.180.

For each CUG the same index identifying the CUG by a calling ship earth station (see Recommendation X.300) should be used in all coast earth stations in order to simplify the calling procedures. The index should be coordinated through INMARSAT.

1.6 Permanent virtual circuits (PVC) would require a permanent circuit between a ship earth station and the coast earth station. The PVC service should not normally be offered to ship earth stations (see also Recommendations X.2 and X.350).

2 Procedures for ship originated calls

2.1 Access to packet switched PDNs

2.1.1 Calling a subscriber of a PDN

2.1.1.1 The coast earth station through which the call is to be set up is selected by procedures defined within the INMARSAT system.

2.1.1.2 The ship board subscriber should select a prefix followed by the full international number of the called DTE. Hence, the numbering sequence selected by a ship board subscriber will be as shown in Table 1/F.122 or, where an integrated numbering system exists within a country, as shown in Table 2/F.122.

TABLE 1/F.122

0	Prefix
DNIC	Data network identification code
$N_1 \dots N_n$	Network terminal number

TABLE 2/F.122

0	Prefix
DCC	Data country code
$N_1 \dots N_n$	National data number

See also Recommendations X.121 and X.350.

2.1.1.3 The calling DTE address of the ship board DTE should always be inserted and have the following format:

$TX_1 X_2 \dots X_8 Y$

where $TX_1 X_2 \dots X_8$ is the INMARSAT mobile number as defined in Recommendation F.125 and Y is an optional digit identifying a specific DTE on board the ship. If the ship is equipped with only one DTE, the digit Y should be omitted. The calling DTE address should not include the prefix and the DNIC allocated to the ocean area in which the ship earth station is located at the time of the call.

2.1.1.4 Selection of facilities on a call-by-call basis should be in accordance with Recommendations X.25 and X.300. The facilities that may be offered on a call-by-call basis are given in Recommendation X.2. A given facility may not be offered in all coast earth stations.

User facilities that have to be agreed for a contractual period are also listed in Recommendation X.2. The application for a given facility should be made with the Administrations operating coast earth stations providing access to public packet switched data networks. The availability of user facilities on the various coast earth stations should be coordinated and be disseminated to ships by INMARSAT; however, the decision to implement a given user facility should be made by each coast earth station owner.

Further study is required to determine which user facilities and/or other user parameters should be offered on all coast earth stations.

Note – Separate provisions apply to closed user groups as described in § 1.5 above.

2.1.2 Use of data transmission prefixes

2.1.2.1 Annex A to Recommendation F.126 defines data transmission prefixes for accessing special terminations. The general called DTE address format when accessing such a termination will be as shown in Table 3/F.122.

TABLE 3/F.122

$P_1 P_2$	Two-digit prefix defined in Annex A to Recommendation F.126
$A_1 \dots A_k$	Optional digits

Optional digits may be a data country code (DCC), a data network identification code (DNIC) or other additional digits.

2.1.2.2 The calling DTE address should have the format defined in § 2.1.1.3 above.

2.1.2.3 Selection of facilities, if required, should be as defined in § 2.1.1.4 above.

2.1.2.4 The use of some prefixes could be barred to some customers.

2.1.2.5 The prefix will be sent on the radio path to the coast earth station but would not be used outside the satellite system. The prefix will be converted at the coast earth station, if required, to the data number associated with the appropriate destination.

2.1.3 *Ship-to-ship calls*

For ship-to-ship calls the called DTE address should have the composition shown in Table 4/F.122.

TABLE 4/F.122

0	Prefix
111S	DNIC allocated to the Maritime Satellite Service
$TX_1 X_2 \dots X_8$	INMARSAT mobile number
Y	Optional digit to designate a particular DTE

The digit S determines the ocean area in which the called ship is located. The values for the digit S are given in Recommendation X.121. The digit Y identifies a specific DTE on board the ship.

2.1.4 *Call progress signals and diagnostic codes*

Call progress signals and diagnostic codes may be received in accordance with § 8.2 of Recommendation X.350.

2.1.5 *CCITT standardized services*

Ships should have full access to CCITT standardized services offered on public data networks such as Teletex, Videotex, and facsimile in accordance with relevant F and S Series Recommendations.

2.2 *Access to PADs*

2.2.1 Ships with start-stop mode DTEs may be offered access to packet switched public data networks through PADs.

PADs associated with coast earth stations are defined in Recommendation X.351. These PADs are defined in such a way that identical procedures may be used when working towards PADs located at different coast earth stations.

Note — Ships may also access a national PAD in a country, but in such cases special procedures only applicable for that PAD would be required. Only PADs designed in accordance with Recommendation X.351 are considered in this Recommendation.

2.2.2 Telephone access procedure

The coast earth station at which the PAD is located is selected in accordance with INMARSAT procedures for telephone calls. The start-stop mode DTE on board the ship would use telephone procedures in order to access a PAD. When the telephone circuit has been established, i.e. when the dial tone is heard, the following digits have to be dialled:

- 20 Prefix
- X₁ X₂ Digits indicating required data rate

Recommendation X.351 specifies that the following data rates and types of modem for full duplex operation will be supported by the PAD:

- Recommendation V.21, 300 bit/s;
- Recommendation V.22, 1200 bit/s;
- Recommendation V.23, 75/1200 bit/s.

The specific modes of operation of the modems are given in Recommendation X.351, § 1.1.

The number to be dialled for each of these data rates is given in Table 5/F.122.

TABLE 5/F.122

Data rate (bit/s)	Dialling sequence
300	2002
1200	2003
75/1200	2011

The PAD may support other data rates on an optional basis. For such data rates the dialling information will be as given in Table 2/X.351.

The dialling sequences 2050 through 2099 are reserved for national use and may be used for access to for example Videotex data bases via the PAD.

2.2.3 Data access procedures

The call control procedures to be used during set-up and clearing of the data connection and the data transfer protocol are given in Recommendation X.351.

The basic elements of the procedure are:

First the DTE accesses the PAD by sending a service request signal consisting of the characters “.” (full stop) and “CR” (carriage return) corresponding to the characters 2/14 0/13 of International Alphabet No. 5 (see Recommendation T.50 for a description of International Alphabet No. 5).

The PAD will respond by returning a PAD identification signal, the composition of which is left to the Administration operating the PAD.

The DTE shall then send, as soon as possible, a signal, i.e. a string of characters, called the selection PAD command signal. This signal is composed as shown in Annex A. The purpose of this signal is:

- to provide the PAD with the address of the called DTE; and
- to provide the PAD with the identity of the calling DTE.

When the call has been extended to the called DTE, the character string COM will be received from the PAD.

At this stage the system enters into the data transfer phase.

The call set-up procedure outlined above may be operated manually or be programmed into the DTE.

During call set-up and during the data transfer phase, the DTE may receive PAD service signals as defined in Recommendation X.28. These signals may indicate various call failures.

Recommendation X.351 also allows other procedures to be used during call set-up. See that Recommendation for further details.

2.2.4 *Standard profile and profile selection*

In order to operate a PAD, a number of PAD parameters must be specified. A general list of PAD parameters is contained in Recommendation X.3.

The PAD defined in Recommendation X.351 offers an initial standard profile with PAD parameter values as given in Table 3/X.351. This standard profile permits a data transfer protocol based on International Alphabet No. 5.

The characters 1/0 (DLE), 1/1 (DC1) and 1/3 (DC3) are used for control purposes and can therefore not be passed transparently through the PAD. The character 1/0 (DLE) is interpreted by the PAD as an escape from the data transfer phase. Therefore, this character is used in order to enable commands to be sent to the PAD. For the various commands that can be used during the data transfer phase, see Recommendation X.28.

The initial standard profile offers the following capabilities:

- by using the character 1/0 (DLE) commands can be sent to the PAD;
- the PAD can at any time send service signals to the DTE;
- the DTE can use characters in order to indicate when a data packet shall be sent from the PAD into the data network;
- the DTE may use the characters 1/1 (DC1) and 1/3 (DC3) for flow control.

The profile does not permit the PAD to provide for any editing functions. Characters which are entered into the PAD are not echoed to the DTE. This has been done because the echoed character will be delayed by approximately 0.6 seconds, thus reducing the character rate to less than two characters per second. The echo mode should therefore not be used. If echo is required, it should be generated locally in the DTE.

A transparent profile or any other profile standardized in Recommendation X.28 may be selected as soon as the data transfer phase is entered by procedures defined in Recommendations X.28 and X.351. The transparent profile will allow octets of data to be passed transparently between the two DTEs. When operating in this mode, the on-board DTE cannot recall the PAD, nor can the PAD send any service signals to the on-board DTE. Therefore, a data transfer protocol must exist between the two DTEs for proper call control.

The various PAD parameters which can be selected by the DTE are given in Recommendation X.3. It should be noted that some of these parameters may not be implemented on all PADs.

Since DTEs may treat the parity bit included in the data octets differently when International Alphabet No. 5 is used, Recommendation X.351 specifies the means by which this problem can be resolved.

2.2.5 *Clearing of calls*

At the end of the call the user at the on-board DTE should make sure that the satellite telephone circuit is properly cleared. The PAD may include provisions for clearing the circuit but this may delay the clearing for several minutes. During this time, the user on-board is still being charged for the use of a maritime satellite telephone circuit.

3 **Procedures for shore-to-ship calls**

3.1 *Calls to ships with DTEs operating in the packet mode*

3.1.1 A subscriber of a PDN calling a ship equipped with DTEs operating in the packet mode will select a numbering sequence as shown in Table 6/F.122.

3.1.2 The numbering sequence requires the subscriber to know the satellite coverage area in which the ship is located in order to select the S digit. The values for the digits are given in Recommendation X.121.

TABLE 6/F.122

P		International prefix (if required)
111		Maritime data country code
S		Ocean area code
	$TX_1X_2 \dots X_8$	INMARSAT mobile number
	Y	Optional digit to designate a particular DTE

3.1.3 Facility selection will follow the normal procedures used in the PDN of origin.

3.1.4 The calling subscriber should be aware of the long two-way transmission delay (approximately 0.6 seconds) on the maritime satellite circuit. This implies that acknowledgement signals may be delayed more than for terrestrial connections.

3.1.5 Call progress signals and diagnostic codes may be received in accordance with Recommendation X.350, § 8.1.

3.1.6 When accessing a ship for CCITT standardized services such as Teletex, Videotex and facsimile, the calling subscriber should make sure, before initiating the call that the called ship is equipped with the appropriate termination.

3.2 *Calls to ships with DTEs operating in the start-stop mode*

For further study.

4 Group calls

Group calls to ship earth stations are calls comprising a message sent simultaneously to all ships within a predetermined group. The group numbering scheme is given in Annex B of Recommendation F.125.

Group calls using direct access through a PDN will not be permitted.

Other means for setting up group calls through public data networks, e.g. by using a message handling system (MHS), are for further study.

ANNEX A

(to Recommendation F.122)

Format of selection PAD command signal for maritime satellite applications

A.1 General format

The general format of the selection PAD command signal is given in Recommendation X.28 and is composed as shown in Figure A-1/F.122.

Beginning of signal

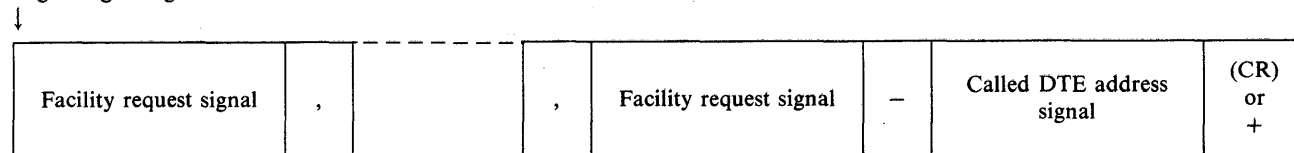


FIGURE A-1/F.122

The character 2/12 (,) is used as a separator between facility request signals and the character 2/13 (–) is used as a separator between the facility request block and the called DTE address signal. The selection PAD command signal is terminated by either of the characters 0/13 (CR) or 2/11 (+).

The facility request block must contain the network user identification (NUI) facility request signal. Other facility request signals are optional.

If the PAD receives a selection PAD command signal with a separator character 2/12 (,) followed by an empty facility request field, the signal will be accepted provided that the other fields of the signal are accepted.

The inclusion of user data in the selection PAD command signals is for further study.

A.2 *Network user identification (NUI) facility request signal*

A.2.1 *Format of the NUI facility request signal*

The NUI facility request signal shall have the format of Figure A-2/F.122 and be sent in the order shown.

Beginning of signal
↓

N	9 digit INMARSAT mobile number (Recommendations E.215/F.125)	Mnemonic code
---	---	---------------

FIGURE A-2/F.122

N is the character 4/14 (N) of International Alphabet No. 5. The mnemonic code of the NUI facility request signal may consist of 1 to 4 characters in columns 2 to 7 of International Alphabet No. 5, except 2/0 (SP), 7/15 (DEL), 2/13 (–), 2/12 (,) and 2/11 (+).

A.2.2 *Validation of the NUI facility request signal*

The coast earth station will check the general authorization of the calling ship for access to the INMARSAT system. Therefore, validation of the NUI facility request signal may be limited to the mnemonic code. However, the possibility of fraudulent calling would be reduced if the ship station identity is also included in the validation.

The ship station identity may also be used for identifying the calling ship for charging purposes, and for insertion of the calling DTE in the call request packet.

A.3 *Composition of the called DTE address signal*

A.3.1 *Calls to a DTE of a PDN*

The called DTE address signal shall consist of the prefix 0 followed by the full international number of the called DTE. This applies also when the called DTE is located in the same country as the maritime PAD.

A.3.2 *Calls to special destinations*

Annex A of Recommendation X.350 defines two-digit prefixes for access to special destinations. For calls to such destinations the called DTE address shall consist of the two-digit prefix, optionally followed by additional digits.

A.4 *Optional facilities*

Facilities to be offered in a maritime PAD is to be determined by the Administration concerned.

The shipboard DTE may request available facilities in accordance with the procedures given in Recommendation X.28.

TELEX NUMBERING PLAN FOR THE MOBILE-SATELLITE SERVICES OF INMARSAT

1 Introduction

1.1 Purpose

The purpose of this Recommendation is to specify a telex numbering plan for mobile earth stations in systems operated by the International Maritime Satellite Organization (INMARSAT). Such systems may include maritime and aeronautical satellite systems. In the future the range of mobile satellite systems may also include satellite systems for other applications.

1.2 Terminology

The TELEPHONE/ISDN numbering plan for INMARSAT is contained in Recommendation E.215. Recommendations E.215 and F.125 are designed to be as similar as possible.

The following terms are used in this Recommendation:

1.2.1 ship station identity

As defined in the Radio Regulations, Appendix 43. See also Recommendation F.120.

1.2.2 INMARSAT mobile international number

The international number which identifies a terminal equipment connected to an INMARSAT mobile earth station for access from a public network.

1.2.3 INMARSAT mobile number

The part of the INMARSAT mobile international number which follows a F.69 telex destination code allocated to the INMARSAT system.

1.2.4 INMARSAT mobile terminal number

That part of the INMARSAT mobile number which identifies a specific terminal equipment connected to the mobile earth station.

1.2.5 Other definitions

For definition of terms such as maritime mobile-satellite service, aeronautical mobile-satellite service, ship earth station, etc., see the Radio Regulations.

1.3 Basic considerations

The considerations which form the basis for the numbering plan are:

1.3.1 that it shall be possible to identify a mobile earth station uniquely from the INMARSAT mobile number;

1.3.2 that the INMARSAT mobile number should have a format where the same number could be used for access from all types of public network;

1.3.3 that the number of three-digit F.69 telex destination codes required for supporting future INMARSAT requirements should be as few as possible;

1.3.4 that different routings could be used for calls to mobile earth stations designed to different INMARSAT system standards;

1.3.5 that Administrations and INMARSAT could apply different charging and accounting rates to different INMARSAT system standards;

1.3.6 that the numbering plan should provide capacity for the identification of terminal equipment connected to a mobile earth station;

- 1.3.7 that the numbering plan should support access to multi-channel mobile earth stations.
- 1.3.8 that the new mobile earth station numbering plan should incorporate numbering plan(s) already in use for the INMARSAT Standard-A system.
- 1.3.9 that the length of the INMARSAT mobile international number will be limited to 12 digits to comply with Recommendations U.11 and U.12.
- 1.3.10 that, for maritime-satellite applications the ship station numbering plan should support access to several ship earth stations in the same ship within one ship station identity;
- 1.3.11 that the Radio Regulations make provision for the allocation of additional MIDs (maritime identification digits) for a specific country when necessary.

2 Format of INMARSAT mobile international number

The format of the INMARSAT mobile international number is:

$$CCC\ T\ X_1 \dots X_k$$

where *CCC* is a three-digit F.69 telex destination code allocated to INMARSAT and *T X₁ ... X_k* is the INMARSAT mobile number. The format of the mobile INMARSAT number is given in § 4.

3 Telex destination codes for INMARSAT applications

Telex destination codes for INMARSAT applications are given in Recommendation F.69 and shown in Table 1/F.125.

TABLE 1/F.125

Telex destination codes for INMARSAT applications

Telex destination code	Application
581	Atlantic ocean region, INMARSAT
582	Pacific ocean region, INMARSAT
583	Indian ocean region, INMARSAT

4 Format of INMARSAT mobile earth station number

4.1 General format

The general format of the INMARSAT *mobile number* is

$$T\ X_1X_2 \dots X_k$$

where the digit *T* is used for discrimination between different INMARSAT systems.

The formats used for the various INMARSAT systems are defined below. The values of the *T* digits are summarized in Table 2/F.125.

The *T* digits represent a limited resource and a new *T* digit should therefore only be allocated when necessary for technical or operational reasons.

The CCITT Secretariat would be responsible for co-ordinating the allocation of new *T* [or *U*] (see § 4.6) digits with the competent Study Groups.

TABLE 2/F.125

Value of T digit for various applications

T digit	Applications
0	Group call in INMARSAT Standard-A, see § 4.2.2
1	Ordinary call in INMARSAT Standard-A, see § 4.2.1
2	Reserved for future use
3	Ordinary call in INMARSAT Standard-B, see § 4.3
4	Ordinary call in INMARSAT Standard-C, see § 4.4
5	Ordinary call in INMARSAT aeronautical system, see § 4.5
6	Reserved for future use
7	Reserved for future use
8	Expedient access to special service terminations in INMARSAT Standard-A, see Recommendation E.215
9	Reserved for future expansion, see § 4.6

4.2 *Formats for INMARSAT Standard-A system*

4.2.1 *Ordinary calls*

The number format used for ordinary calls to ship earth stations in INMARSAT Standard-A system is as follows:

1 X₁X₂X₃X₄X₅X₆ (7 digits)

where 1 corresponds to the T digit and the digits X₁X₂X₃X₄X₅X₆ are allocated to ships by INMARSAT.

The length of the INMARSAT mobile number will be 7 digits, making the length of the INMARSAT mobile international number equal to 10 digits.

4.2.2 *Group calls*

For group calls, the INMARSAT mobile number takes the following format:

0 X₁X₂X₃X₄X₅X₆X₇X₈ (9 digits)

where 0 corresponds to the T digit and X₁ through X₈ takes values assigned by INMARSAT.

The group call numbering scheme is shown in § B.2.2.

The length of the INMARSAT mobile number will be 9 digits making the length of the INMARSAT mobile international number equal to 12 digits.

4.3 *Formats for INMARSAT Standard-B system*

4.3.1 *Ordinary calls*

For ordinary calls to ship earth stations in INMARSAT Standard-B system, the format shall be initially:

3 M₁I₂D₃X₄X₅X₆X₇X₈ (9 digits)

where 3 corresponds to the T digit and the M₁I₂D₃X₄X₅X₆ are the first 6 digits of the ship station identity MIDXXXOOO (see Annex A). The INMARSAT mobile terminal number digits X₇X₈ may be used for identifying terminal equipment connected to a ship earth station, for discriminating between channels for multi-channel ship earth stations and for discriminating between several ship earth stations on the same ship.

The number format is:

3 X₁X₂X₃X₄X₅X₆X₇X₈ (9 digits)

where the digit X₁ may take the values 8 or 9 which are reserved for future INMARSAT applications.

4.3.2 *Group calls*

The group call numbering scheme is shown in Annex B.

The length of the INMARSAT mobile number will be 9 digits making the length of the INMARSAT mobile international number equal to 12 digits.

4.4 *Format for INMARSAT Standard-C system*

4.4.1 *Ordinary calls*

For ordinary calls to ship earth stations in INMARSAT Standard-C system, the format shall be initially:

4 M₁I₂D₃X₄X₅X₆X₇X₈ (9 digits)

where 4 corresponds to the T digit and where at least the digits M₁I₂D₃X₄X₅X₆ are part of the ship station identity. The digits X₇X₈ may also be part of the ship station identity or be used for discrimination between several ship earth stations on the same ship.

The number format is:

4 X₁X₂X₃X₄X₅X₆X₇X₈ (9 digits)

where the digit X₁ may take the values 8 or 9 which are reserved for INMARSAT applications.

4.4.2 *Group calls*

The group call numbering scheme is shown in Annex B. The length of the INMARSAT mobile number will be 9 digits making the length of the INMARSAT mobile international number equal to 12 digits.

4.5 *Format for INMARSAT aeronautical system*

The general format of numbers in the INMARSAT aeronautical system is as follows:

5 X₁X₂X₃X₄X₅X₆X₇X₈ (9 digits)

where 5 corresponds to the T digit.

The format of the digits X₁ through X₈ is still to be determined.

The length of the INMARSAT mobile number will be 9 digits making the length of the INMARSAT mobile international number equal to 12 digits.

4.6 *Future INMARSAT standard systems*

T digits should be allocated for each new INMARSAT standard system in the future. If an earlier system is taken out of service, T digits allocated for that system may be reallocated to new systems.

If the capacity provided by the T digits of Table 2/F.125 is not sufficient, then further capacity may be made available by using T = 9 followed by an additional digit (U) as follows:

$$9 \text{ U } X_1 X_2 \dots X_k$$

where the digits $X_1 \dots X_k$ identifies the mobile earth station and any extension connected to it. The digit U is used to identify new INMARSAT systems or for technical and operational reasons (see § 6 below).

5 **Digit analysis**

If different routing and/or accounting applies to different INMARSAT standard systems, then the digits CCCT need to be analyzed at international exchanges.

If the routing capacity is increased by using T = 9 (see § 4.6), then the digits CCC9U need to be analyzed and this is for further study.

6 **Presentation of INMARSAT mobile numbers in directories**

6.1 *General*

INMARSAT mobile numbers may be published in separate directories or in separate sections of general directories.

In directories, only the INMARSAT mobile numbers, as specified in § 4.1, shall be listed. The telex destination code to be used and instruction for the subscribers should be contained in general parts of the directories.

The subject on directories for mobile satellite services requires further studies.

ANNEX A

(to Recommendation F.125)

Use of ship station identification for maritime applications of systems operated by INMARSAT

A.1 *General*

Appendix 43 of the Radio Regulations defines an international identification plan for ships participating in the maritime mobile services. The ship station identity consists of nine digits and is composed as follows:

$$M_1 I_2 D_3 X_4 X_5 X_6 X_7 X_8 X_9$$

where the digits $M_1 I_2 D_3$ determine the ship's nationality.

For ships participating in systems operated by INMARSAT, the main part of this Recommendation specifies a format of the INMARSAT mobile number as follows:

$$T X_1 X_2 \dots X_k$$

The purpose of the digit T is explained in § 4.

For maritime applications, the number can be regarded as being composed of three blocks as follows:

T	$X_1 X_2 \dots X_n$	$X_{n+1} \dots X_k$
Block 1	Block 2	Block 3

where the digit in block 1 is the digit T, the digits in block 2 are related to the ship station identity as explained below, and block 3 contains digits which are used for other purposes (e.g. INMARSAT mobile terminal number). In some INMARSAT systems, block 3 may be empty.

Note 1 – For the INMARSAT Standard-A system, INMARSAT applies a ship numbering plan which is not related to the ship station identification plan of the Radio Regulations. In this numbering plan the digit T takes the fixed value $T = 1$.

Note 2 – For INMARSAT Standard-B and C systems, the digit X_1 may take the values 8 or 9 for future applications. In this case, the digits in block 2 are not related to the ship station identification plan.

A.2 Constraints on ship station identification and numbering

A.2.1 The present number capacity of the telex network requires that the INMARSAT mobile number must consist of 9 or fewer digits to comply with the requirements of international signalling systems specified in the U-Series Recommendations.

A.2.2 The new numbering plan must cater for the following:

- identification for calls to ship board terminal equipment connected to the ship earth station;
- the possibility of several ship earth stations on the same ship where all ship earth stations have a number associated with the unique ship station identity of the ship;
- the capability of supporting multi-channel ship earth stations.

These capabilities may require digits in block 3 of the INMARSAT mobile number, thus reducing the available space for block 2.

A.3 Applications of ship station identity

A.3.1 Digit capacity in block 2

The INMARSAT Standard-A system can only support 6 digits in block 2 because of the addressing capacity on the radio path.

The addressing capacity of INMARSAT Standard-B and C systems on the radio path can cater for up to 9 digits in block 2. However, the limited digit capacity of the terrestrial networks puts the following initial constraints to the number of digits in block 2:

- for the INMARSAT Standard-B system, the initial digit capacity in block 2 is 6 digits in order to allow sufficient capacity in block 3 for supporting the capabilities listed in § A.2.2 above.
- for the INMARSAT Standard-C system, the initial digital capacity in block 2 is 6 digits to allow sufficient capacity in block 3 for supporting the possibility of identifying several terminal equipments connected to a ship earth station and of several ship earth stations on the same ship..

A.3.2 Mapping between ship station identity and digits in block 2

The mapping between ship station identity and digits in block 2 is shown in Table A-1/F.125.

For ship earth stations, the ship station identity is thus derived from the digits in block 2 by adding 0₅ at the end until the identity consists of 9 digits.

The digit T in block 1 determines the type of ship earth station and, implicitly, the number of digits in block 2. The relationship is shown in Table A-2/F.125. Further details of the number structure is given in the main part of the Recommendation.

A.3.3 *Ships equipped with several INMARSAT standard systems*

The ship station identity for such ships is the one derived from the ship earth station standard having the smallest size of block 2. This applies only if the numbering systems for the ship earth station standards are related to the ship station identification plan.

TABLE A-1/F.125

Mapping between ship station identity and digits in block 2 of the INMARSAT mobile station number

Ship station identity			XXX XXX 000	XXX XXX 0X0	XXX XXX 0XX
Block 2 mapping	Size of block 2	6 digits	XXX XXX	Mapping not possible	Mapping not possible

X: any digit between zero (0) and nine (9)

0: zero (0)

TABLE A-2/F.125

Relationship between the digit T and the format of the ship station identity in 12 digit INMARSAT mobile international numbers

Value of digit T	INMARSAT standard system	Number of digits in block 2	Format of ship station identity
0	A	(Note 1)	(Note 1)
1	A	6	(Note 2)
2	Reserved	—	—
3	B	6	XXX XXX 000
4	C	6	XXX XXX 000
5	Aeronautical	(Note 3)	(Note 3)
6	Reserved	—	—
7	Reserved	—	—
8	A	(Note 4)	(Note 4)
9	Future expansion	Further study	Further study

Note 1 — Group call address (see Annex B for format of group call addresses).

Note 2 — The INMARSAT mobile number is not related to the ship station identification plan of Appendix 43, Radio Regulations.

Note 3 — The numbering plan for the Aeronautical-Satellite service is not related to the ship station identification plan of Appendix 43, Radio Regulations.

Note 4 — See § 4 for the use of this T-digit.

ANNEX B

(to Recommendation F.125)

Group call numbering scheme for the INMARSAT system

B.1 Categories for group call services

At present, four different categories of group call service have been envisaged within the maritime mobile-satellite service.

B.1.1 National group calls

The category is defined to address all ships of the same nationality.

B.1.2 Fleet group calls

This category is defined to address all ships within one fleet.

B.1.3 Selected group calls

This category is defined to address a number of ships having a community of interest irrespective of nationalities or fleets, and forming a predefined group.

B.1.4 Area group calls

This category is defined to address all ships of any nationality located within a predetermined geographical area.

B.2 Group call formats

B.2.1 The general group call format is $T X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8$ where the digits $T X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8$ take the values in § B.2.2 for INMARSAT Standard-A and the values in § B.2.3 for other INMARSAT standards.

B.2.2 The group call numbering schemes for the INMARSAT Standard-A system will use eight decimal digits $X_1 \dots X_8$ following the T digit, with $T = 0$, allocated as follows:

$M_2 I_3 D_4 0_5 0_6 0_7 0_8 0_9$ National group call

$M_2 I_3 D_4 F_5 F_6 F_7 F_8 F_9$ Fleet group call

$0_2 0_3 S_4 S_5 S_6 S_7 S_8 S_9$ Selected group call

$0_2 0_3 0_4 A_5 A_6 A_7 A_8 A_9$ Area group call

where $M_2 \neq 0$ $M_2 \neq 1$ $F_5 \neq 0$ $S_4 \neq 0$.

For $T = 1$ or 8 , the group call number is not valid.

B.2.3 For INMARSAT standards other than Standard-A, the format of the digits $X_1 \dots X_8$ is as follows:

0MID $0_5 0_6 0_7 0_8$ National group calls

0MID $F_5 F_6 F_7 F_8$ Fleet group calls

000 $S_4 S_5 S_6 S_7 S_8$ Selected group calls

0000 $A_5 A_6 A_7 A_8$ Area group calls

The T digit takes the value allocated for the particular standard in accordance with Table 2/F.125.

Hence, for a fleet group call to a Standard B ship earth station, the format would be:

3 0 MID $F_5 F_6 F_7 F_8$

and for a fleet group call to a Standard-C ship earth station, the format would be:

4 0 MID $F_5 F_6 F_7 F_8$

B.2.4 The MIDs in national and fleet group numbers are those allocated in Table 1 of Appendix 43, Radio Regulations [1].

B.2.5 In accordance with § 4 of the above-mentioned Appendix, the particular MID reflects only the country allocating the group call identity and therefore does not prevent group calls to fleets containing more than one ship nationality. Allocation of selected group numbers should be avoided when the same group could equally well be assigned a fleet group number.

B.2.6 National group numbers and fleet group numbers should be allocated by countries. Selected group numbers and area group numbers as applicable to the INMARSAT system should be allocated by INMARSAT; allocation of such numbers may require cooperation with other organizations.

B.2.7 A country having assigned a national group or fleet group number should notify the Director-General of INMARSAT if those numbers are going to be used within the INMARSAT system.

Reference

- [1] *Radio Regulations*, Appendix 43, ITU, Geneva, 1982, revised in 1985, 1986 and 1988.

Recommendation F.126

SELECTION PROCEDURES FOR THE INMARSAT MOBILE-SATELLITE TELEX SERVICE

1 Introduction

1.1 Purpose

The purpose of this Recommendation is to standardize:

- a) the numbering and selection procedures for subscribers in the international telex service calling a ship-earth station in the INMARSAT systems;
- b) the procedures for calling a subscriber, an operator or a special service termination in the international telex service from a ship-earth station.

This Recommendation applies to INMARSAT Standard-A, B and C systems. Selection procedures for the INMARSAT aeronautical system is for further study.

1.2 Related CCITT Recommendations

- | | |
|-------------|---|
| F.125 | Telex numbering plan for the mobile-satellite services of INMARSAT |
| F.127 | Operational procedures for interworking between the telex service and the service offered by INMARSAT Standard-C system |
| F.60 | Operational provisions for the international telex service |
| F.68 | Establishment of the automatic intercontinental telex network |
| F.69 | Plan for telex destination codes |
| F.72 | International telex store-and-forward — general principles and operational aspects |
| E.200/F.110 | Operational provisions for the Maritime Mobile Service |
| F.122 | Operational procedures for the Maritime Satellite Data Transmission Service |
| F.130 | Maritime answer-back codes |

- F.131 Radiotelex service codes
- E.215 Telephone/ISDN numbering plan for the mobile-satellite services of INMARSAT
- U.61 Detailed requirements to be met in interfacing the international telex network with maritime satellite systems
- E.216 Selection procedures for the INMARSAT mobile-satellite telephone and ISDN services

2 Numbering procedures

2.1 Maritime mobile-satellite services are international in nature and international procedures will be adopted to provide access to these services. For some purposes, a maritime mobile-satellite system can be regarded as analogous to a national network and the ship-earth stations as subscribers within that network.

For automatic shore originated calls, international selection procedures will be adopted using the three-digit telex destination code 58S and an INMARSAT mobile number where the digit S indicates the ocean region. The telex numbering plan for ship-earth stations in the INMARSAT System is given in Recommendation F.125.

2.2 For automatic ship originated calls international selection procedures will be used, including a standardized access code, i.e. all ships in all ocean areas will use the same access code to identify an automatic international call.

In addition, access codes will be adopted to identify other functions of the satellite system. Annex A lists the allocation of the access codes. Additional access codes may be required and these can be added, using the spare decimal numeric combinations.

It is desirable to have one set of access codes for all services. The access codes listed in Annex A can be used where applicable for telephone and data services and, if necessary, additional access codes for these services may be assigned by the competent Study Group. Close cooperation between the competent Study Groups will be necessary when assigning new access codes.

The use of some access codes could be barred to some customers.

2.3 The access codes will be sent over the radio path to the coast earth station but would not be used outside the satellite system. Hence, an access code sent to the coast earth station would not be used in the international network.

2.4 The service associated with each access code is defined in Annex B.

3 Procedures for shore-to-ship calls

3.1 General selection sequence

A shore based subscriber calling a ship in the INMARSAT system will select a numbering sequence as follows:

58S	Telex destination code
T X ₁ X ₂ ...X _n	INMARSAT mobile number
+	End of selection.

3.2 Selection of S digit

The numbering sequence requires the subscriber to know the satellite coverage area in which the ship is located. The values of the S digit are given in Recommendation F.125.

3.3 *INMARSAT mobile number*

The INMARSAT mobile number $T X_1 X_2 \dots X_n$ takes one of the formats defined in Recommendation F.125. The various possibilities are summarized in Table 1/F.126 and are further outlined below.

TABLE 1/F.126
Formats of INMARSAT mobile numbers

Format	Application
1 $X_1 X_2 X_3 X_4 X_5 X_6$	Ordinary call to INMARSAT Standard-A ship-earth station
3 $M_1 I_2 D_3 X_4 X_5 X_6 X_7 X_8$	Ordinary call to INMARSAT Standard-B ship-earth station
4 $M_1 I_2 D_3 X_4 X_5 X_6 X_7 X_8$	Ordinary call to INMARSAT Standard-C ship-earth station
5 $X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8$	Call to INMARSAT aeronautical aircraft earth station

3.3.1 *INMARSAT Standard-A system*

For an ordinary call to an INMARSAT Standard-A ship earth station, the format of the INMARSAT mobile number is:

$$1 X_1 X_2 X_3 X_4 X_5 X_6$$

where the digits $X_1 X_2 X_3 X_4 X_5 X_6$ identify a specific ship earth station. If there are more than one ship earth station at the ship, each will have its own unique INMARSAT mobile number.

3.3.2 *INMARSAT Standard-B system*

The INMARSAT mobile number takes the following format for ship earth stations in INMARSAT Standard B system:

$$3 M_1 I_2 D_3 X_4 X_5 X_6 X_7 X_8$$

3.3.3 *INMARSAT Standard-C system*

The INMARSAT mobile number takes the following format:

$$4 M_1 I_2 D_3 X_4 X_5 X_6 X_7 X_8$$

3.3.4 *INMARSAT Aeronautical system*

The format of the INMARSAT mobile number, $5 X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8$ is still to be determined.

4 **Procedures for ship-to-shore calls**

4.1 *General*

It should be possible to provide all information required for establishing a call from user terminals connected to the ship-earth station. Such information may include:

- a) called party address including any access code;
- b) desired coast-earth station;
- c) supplementary service requests.

The information in a) is required for all calls. The information in b) and c) may be required on some calls, e.g. if the user requests a specific routing of the call or if specific service characteristics are to be applied.

These ship-to-shore procedures are not applicable to Standard C and reference should be made to Recommendation F.127 for further details.

4.2 *Calling a terrestrial subscriber*

4.2.1 A shipboard user will select the access code 00 followed by the full international telex number required, whether or not the coast-earth station is located in the country of the called subscriber. Hence the numbering sequence selected by a ship board subscriber will be of the form:

00	Access code for automatic call
I ₁ I ₂ I ₃	2 or 3 digit telex destination code
N ₁ -N _n	National number of the subscriber.
+	End of selection.

4.2.2 It is also possible to select specific services associated with the call by use of access codes other than 00, e.g. 21 (store and forward international), 22 (store and forward national), 23 (short code selection) and 24 (telex letter services).

A ₁ A ₂	Access code
I ₁ I ₂ I ₃	2 or 3 digit telex destination code
N ₁ -N _n	National number of the subscriber
+	End of selection.

4.2.3 The ship earth station will permit the choice of coast earth station identity through which the call is to be routed. Convenient land-line routings (e.g. use of the coast earth station nearest the destination country) could be encouraged by tariff considerations.

4.2.4 In INMARSAT Standard-B systems the user may choose among several service options. If some service characteristics are user selectable, it should be possible to make the selection from the user terminal.

4.3 *Calling an operator*

4.3.1 A shipboard user will select the access code followed by a second digit to identify the type of operator required.

4.3.2 Table 2/F.126 illustrates the principle involved for two types of operator.

Some Administrations may wish to operate a system whereby shipboard users insert after the operator access code a telex destination code (I₁,I₂,I₃). The insertion of the telex destination code will allow the call to be routed to a relevant operator. If an Administration operating such a system receives an operator access code without the optional digits, then the call must still be connected to an appropriate operator. Similarly, if an Administration not operating such a system receives an operator access code followed by optional digits, then the optional digits should be ignored and the call connected to the operator denoted by the access code alone.

TABLE 2/F.126

Access code		Optional digits	End of selection	Type of operator
Digit 1	Digit 2			
1	1	I ₁ I ₂ I ₃	+	International operator
1	2	I ₁ I ₂ I ₃	+	International enquiries

4.3.3 Each Administration may decide which operators to provide, where they are to be located and how the call would be routed. If a request is received from a ship for a type of operator that the Administration does not provide, then the call will be routed to an operator convenient for that Administration.

4.4 *Other access codes in Annex A*

Each Administration may decide which services to provide and how the call will be routed. If a request is received from a ship for a service that the Administration does not provide, then the call will be routed to a location convenient for that Administration.

The general selection sequence could be as shown in Table 3/F.126.

The actual sequence may be decided by the Administration or INMARSAT.

TABLE 3/F.126

Access code		Optional digits	End of selection	Type of service
Digit 1	Digit 2			
2	3	X ₁ X ₂	+	Short code selection
3	2	I ₁ I ₂ I ₃	+	Medical advice
3	8	—	+	Medical assistance

5 **Procedures for ship-to-ship calls**

5.1 Selection procedures for ship-to-ship calls will be similar to those for ship-to-shore calls, using the maritime telex destination code 58S. The numbering sequence selected by the shipboard user will be of the form:

00	Access code for automatic call
58S	Telex destination code
T X ₁ X ₂ ... X _n	INMARSAT mobile number

This format will be used whether or not the ships are in the same ocean area.

5.2 Each Administration operating a coast earth station may decide whether to switch ship-to-ship traffic within an ocean area at the coast earth station or at an international telex switching centre.

6 **Instructions for telex subscribers**

The general principles laid down in Recommendation F.60 apply also to the Maritime Mobile-Satellite Service. The instructions should contain the full procedures.

7 **Instructions for users at ship earth stations**

It would be beneficial if coast earth station operators and/or INMARSAT provided user manuals defining the system capabilities and services offered. The manuals should contain information such as:

- general instructions for use of the INMARSAT services,
- location of coast earth stations;
- facilities provided and services supported by each coast earth station;
- selection procedures for setting up automatic calls;
- selection procedures for operator assisted calls for each coast earth station;
- selection procedures for setting up calls to the services listed in Annex A for each coast earth station;
- other instructions which INMARSAT may feel useful or important to users.

ANNEX A

(to Recommendation F.126)

Allocation of telephone prefixes, telex access codes and data transmission prefixes

A.1 Administrations should make application for the allocation of new prefixes and access codes to the CCITT Secretariat. The application should contain a definition for the service, termination or facility to be accessed.

The CCITT Secretariat would be responsible for coordinating the allocation of new prefixes and access codes with the competent Study Groups. The allocation of new prefixes and access codes should be done in such a way as to ensure that equivalent services carried by means of telephone, telex or data circuits are given the same prefix.

The prefixes and access codes to be used for automatic calling should be as follows:

Telephone — For international calls the prefix should be 00 followed by the international telephone number of the called subscriber. As an option, for national calls, the prefix 0 followed by the national (significant) number of the called subscriber could be used.

Note — In the Maritime Satellite Service only, the international format is preferred.

Telex — For international calls the access code should be 00 followed by the international telex number of the called subscriber. As an option for national calls the access code should be 0 followed by the national telex number of the called subscriber could be used.

Note — In the Maritime Satellite Service only the international format is recommended.

Data transmission — For data calls through a public data network the format should always consist of the prefix 0 followed by the international data number of the called subscriber (see Recommendation X.350, § 5.2.1).

A.2 Table A-1/F.126 contains a list of prefixes and access codes allocated up to the present time for access to special destinations, services or facilities.

A.3 The facilities are defined in Annex B.

TABLE A-1/F.126 (Note 1)

Allocation of telephone prefixes, telex access codes and data transmission prefixes

Category	Prefix or access code		Applications (Notes 2 and 3)	Telephone	Telex	Data
	Digit 1	Digit 2				
Operator	1	0	Spare	—	—	—
	1	1	International outgoing operator	A	A	NA
	1	2	International information service	A	A	FS
	1	3	National operator	A	A	NA
	1	4	National information service	A	A	FS
	1	5	Radiotelegram service	FS	A	NA
	1	6	Spare	—	—	—
	1	7	Booking of telephone calls (Note 4)	A	A	NA
	1	8	Spare	—	—	—
	1	9	Spare	—	—	—
Automatic facilities	2	0	Access to maritime PAD (Note 5)	A	NA	NA
	2	1	Store-and-forward (international)	NA	A	NA
	2	2	Store-and-forward (national)	NA	A	NA
	2	3	Abbreviated dialling (short code selection)	A	A	NA
	2	4	Telex letter service	NA	A	NA
	2	5	Access to PSPDN	(Note 8)	NA	(Note 8)
	2	6	Spare	—	—	—
	2	7		—	—	—
	2	8		—	—	—
	2	9		—	—	—
Specialized assistance (Note 6)	3	0	Spare	—	—	—
	3	1	Maritime enquiries	A	A	A
	3	2	Medical advice	A	A	A
	3	3	Technical assistance	A	A	A
	3	4	Person-to-person call	A	NA	NA
	3	5	Collect calls	A	NA	NA
	3	6	Credit card calls	A	A	NA
	3	7	Time and charges requested at end of call	A	A	NA
	3	8	Medical assistance	A	A	A
	3	9	Maritime assistance	A	A	A
Ship reporting	4	0	Spare	—	—	—
	4	1	Meteorological reports	A	A	A
	4	2	Navigational hazards and warnings	A	A	A
	4	3	Ship position reports	A	A	A
	4	4	Spare	—	—	—
	4	5		—	—	—
	4	6		—	—	—
	4	7		—	—	—
	4	8		—	—	—
	4	9		—	—	—

TABLE A-1/F.126 (cont.)

Category	Prefix or access code		Applications (Notes 2 and 3)	Telephone	Telex	Data
	Digit 1	Digit 2				
Information retrieval	5	0	Spare	—	—	—
	5	1	Meteorological forecasts	FS	FS	FS
	5	2	Navigational warnings	FS	FS	FS
	5	3	Videotex (international)	FS	NA	FS
	5	4	Videotex (national)	FS	NA	FS
	5	5	News (international)	FS	FS	FS
	5	6	News (national)	FS	FS	FS
	5	7	} Spare	—	—	—
	5	8		—	—	—
	5	9		—	—	—
Specialized use (Note 7)	6		Administration specialized use, e.g. leased lines	A	A	FS
	7		Spare	—	—	—
	8		Spare	—	—	—
Test	9	0	Spare	—	—	—
	9	1	Automatic test line	A	A	FS
	9	2	Commissioning tests	A	A	A
	9	3	Spare	—	—	—
	9	4	Spare	—	—	—
	9	5	Operational coordination	A	A	A
	9	6	} Spare	—	—	—
	9	7		—	—	—
	9	8		—	—	—
	9	9		—	—	—

Note 1 — The same table is contained in Recommendations E.216 and X.350.

Note 2 — The entries in the columns under Telephone, Telex and Data have the following meanings:

A: Applicable for access by this service

NA: Not applicable for access by this service

FS: For further study.

Note 3 — The prefix or access code may be followed by an optional telephone country code, data country code (or data network identification code) or telex destination code, or other optional digits.

Note 4 — Via some coast earth stations, it would be possible to book telephone calls using the telex service.

Note 5 — PAD: Packet Assembly/Disassembly facility. The prefix 20 should be followed by two digits indicating the required data rate (see Recommendation X.351).

Note 6 — The prefixes 34, 35, 36 and 37 may be followed by the international number of the called subscriber.

Note 7 — Digits following digit 6 will be allocated on a national basis.

Note 8 — The prefix is used for access to maritime-satellite data switching exchanges (MSDSEs) (see Recommendation X.350) for virtual call data services (Recommendation X.25) by means of telephone circuits in the INMARSAT system.

ANNEX B

(to Recommendation F.126)

Application of telephone prefixes, data transmission prefixes and telex access codes – Definitions and descriptions

Services and facilities normally provided by the telephone data or telex networks are otherwise defined in CCITT Recommendations and do not require any further definitions. This annex provides definitions and descriptions of some of the special facilities of Annex A.

Note 1 – The same annex is contained in Recommendation E.216.

Note 2 – In this annex the term prefix is used to designate telephone prefix, telex access code and data transmission prefix.

B.1 Operator

B.1.1 international outgoing operator (prefix 11)

Prefix 11 will connect the caller to an international operator position. The prefix may be followed by a country code. If so, the procedure for servicing the call is described in § 4.3.

B.1.2 international information service (prefix 12)

Prefix 12 will connect the caller to the international information service. The prefix may be followed by a country code. If so, the procedure for servicing the call is described in § 4.3.

B.1.3 national operator (prefix 13)

Prefix 13 will connect the caller to a national or international operator position in the country where the coast earth station is located. The type of operator to be used is decided by the Administration.

Note – Prefix 13 may not be offered on all coast earth stations.

B.1.4 national information service (prefix 14)

Prefix 14 will connect the caller to a national or international operator position. The type of information service to be used is decided by the Administration.

Note – Prefix 14 may not be offered on all coast earth stations.

B.1.5 radiotelegram service (prefix 15)

Prefix 15 will connect the caller to the radio telegram service position. The transmission of radio telegram should normally be made by radio telex only. The radio telegram service in this case should be arranged in such a way that automatic retransmission is possible.

B.1.6 booking of telephone calls (prefix 17)

Prefix 17 will allow the caller to book a telephone call via the telex service.

This telex message will be routed to the relevant international (or national) telephone operator.

B.2 Automatic facilities

B.2.1 access to maritime PAD (prefix 20)

Prefix 20 is used for gaining access to a packet assembly/disassembly (PAD) facility in a packet switched public data network. The PAD is accessed via telephone circuits in the INMARSAT system. The prefix is followed by two additional digits indicating the required data rate (see Recommendation X.351).

B.2.2 store-and-forward (international) (prefix 21)

Prefix 21 is used for gaining access to a store-and-forward unit (SFU) for international calls.

B.2.3 store-and-forward (national) (prefix 22)

Prefix 22 is used for gaining access to a store-and-forward unit (SFU) for national calls.

B.2.4 abbreviated dialling (short-code selection) (prefix 23)

Abbreviated dialling (short-code selection) will allow the caller to make a connection by selecting a short special number (e.g. 2 or 3 digits) instead of a full international (or national) number.

B.2.5 telex letter service (prefix 24)

Prefix 24 is used for directly transmitting a message originated from a ship earth station (SES) to a selected telegraph office for delivery by mail or any appropriate means.

B.2.6 access to PSPDN (prefix 25)

Prefix 25 is used for obtaining access via INMARSAT telephone circuits to a maritime satellite data switching exchange (MSDSE) (see Recommendation X.350) for virtual call data services (Recommendation X.25). The prefix is followed by additional digits indicating data rate or other parameters associated with the call.

B.3 *Specialized assistance*

B.3.1 maritime enquiries (prefix 31)

Prefix 31 may be used for special enquiries such as ship location, authorization, all telegrams, etc.

B.3.2 medical advice (prefix 32)

Prefix 32 provides connection to national medical facilities (hospital, etc.) for obtaining medical advice or consultation. The prefix may be followed by a country code.

B.3.3 technical assistance (prefix 33)

For the Maritime Satellite Service, prefix 33 provides connection to the technical personnel of the coast earth station in case difficulties are experienced in establishing communication.

For other maritime systems, further study is required.

B.3.4 person-to-person call (prefix 34)

Prefix 34 should be used when the call is for a specific person at the called number. An operator will intervene in the call, and should be provided with the details of the person to be called. The prefix may be followed by the number of the called party.

B.3.5 collect calls (prefix 35)

Prefix 35 should be used for calls, charges for which will be billed to the called party. The telephone operator will intervene in the call and should be provided with the information pertinent to the call. The prefix may be followed by the number of the called party.

B.3.6 credit card calls (prefix 36)

Arrangements can be made with the Administration of certain coast stations or coast earth stations for payments for communication services to be made by a credit card. The arrangement is valid only for the services of the station with which it is made.

An operator will intervene in the call and should be provided with details of the credit card. The prefix may be followed by the number of the called party.

B.3.7 time and charges requested at end of call (prefix 37)

Prefix 37 provides, upon completion of the call, either automatic printout of charging information, or connection to an operator who will supply charging information on the call. The prefix is followed by the number of the called party.

B.3.8 medical assistance (prefix 38)

If the condition of an ill or injured person aboard ship requires his urgent delivery ashore or the delivery of a doctor aboard ship, prefix 38 provides connection to the appropriate national authority responsible for this kind of activity.

B.3.9 maritime assistance (prefix 39)

Prefix 39 provides connection to the appropriate national authority in case maritime assistance is required (e.g. tow, oil pollution).

B.4 Ship reporting

B.4.1 meteorological reports (prefix 41)

Prefix 41 provides connection to the meteorological office for transmission of ship weather reports.

B.4.2 navigational reports from ships (prefix 42)

Prefix 42 provides connection to a navigational office for transmission of information from ships on any hazards which could endanger safety of navigation (e.g. wrecks, derelicts, floating obstructions, defective radiobeacons or light vessels, icebergs, floating mines, etc.).

B.4.3 ship position reports (prefix 43)

Prefix 43 provides connection to an appropriate national or international centre collecting ship movement information for search and rescue (or other) purposes.

B.5 Information retrieval services (prefixes 5x)

Further study is required.

B.6 Specialized use (prefixes 6x)

Further study is required.

B.7 (Prefixes 7x are reserved for future use.)

B.8 (Prefixes 8x are reserved for future use.)

B.9 Test

B.9.1 automatic test line (prefix 91)

Prefix 91 provides an automatic test of the ship earth station in telex and telephony mode. In the Maritime-Satellite Service the coast earth station will automatically transmit a "QUICK BROWN FOX" test message for telex and provide a loop-around test line connection in accordance with Recommendation Q.11 for telephony. Test lines for data transmission are for further study.

B.9.2 commissioning tests (prefix 92)

Prefix 92 is used in the Maritime-Satellite Service for conducting commissioning tests of ship earth stations.

B.9.3 operational coordination (prefix 95)

Prefix 95 is used in the Maritime-Satellite Service for operational communications between management and maintenance elements of the system.

**OPERATIONAL PROCEDURES FOR INTERWORKING BETWEEN THE TELEX
SERVICE AND THE SERVICE OFFERED BY INMARSAT STANDARD-C SYSTEM**

The CCITT,

considering

- (a) that INMARSAT has introduced various maritime services based on their Standard-A, Standard-B and Standard-C systems;
- (b) that Recommendation F.120 specifies ship station identification for the Maritime Mobile-Satellite Service;
- (c) that Recommendation F.125 specifies the numbering plan for the Maritime Mobile-Satellite Telex Service;
- (d) that Recommendation F.126 specifies the selection procedures for Maritime-Satellite Telex Service;
- (e) that the provision of interworking with the telex service is a mandatory requirement of the INMARSAT Standard-C system;

unanimously recommends

that operational procedures for interworking between the telex service and the service provided by the INMARSAT Standard-C system should be in accordance with this Recommendation.

1 Definitions

- 1.1 Ship earth station is defined in Article 1, Section 4.16 of the *Radio Regulations*, ITU, Geneva 1982.
- 1.2 Coast earth station is defined in Article 1, Section 4.14 of the *Radio Regulations*, ITU, Geneva 1982.
- 1.3 **maritime-satellite store-and-forward unit (MSSFU)** is the functional interface between the maritime-satellite message transmission system and a public telex network.

2 Scope

- 2.1 The purpose of this Recommendation is:
 - a) to standardise procedures for the subscribers to a public telex network calling ship earth stations in the maritime satellite Standard-C system;
 - b) to standardise procedures for ship earth stations calling subscribers in the public telex network;
 - c) to standardise procedures for ship-to-ship calls that transit the public telex network.

3 Introduction

- 3.1 The characteristics of the maritime satellite circuit provided by the INMARSAT Standard-C System are such that only store-to-store operation is supported.
- 3.2 The present limitation means that the maritime-satellite network provided by the INMARSAT Standard-C system must be viewed as conceptually different from that provided by the INMARSAT Standard-A system. As expressed in Recommendation F.126 for the Standard-A system the terminals on-board ships may be viewed as belonging to the subscribers of a national (telephone, telex or packet) network, because normal international working is supported and is so perceived by the users. However the network provided by Standard-C system cannot be viewed in this way because, in this case, the basic concept is that of interworking between different networks (where the MSSFU functions as an interworking unit).
- 3.3 A general description of the INMARSAT Standard-C system and the services it may support is given in a Supplement to the F-Series Recommendations.

4 Service outline

4.1 Communication between subscribers of the telex service and a ship-earth station is on a store-and-forward basis. Thus, conversational mode interworking between terminals is not provided.

4.2 In the shore-to-ship direction two modes of operation are considered by this Recommendation. These are designated as one-stage and two-stage selection. Administration/RPOAs may provide either or both modes of operation.

These services may be extended across international borders on a bilateral basis. Where no such bilateral agreement exists the Administration operating the system may clear the call and return the service signal (NA).

4.3 In ship-to-shore direction subscribers to the Maritime-Satellite Service provided by the Standard-C system may send single messages to the subscribers to the public telex network and to the appropriate Applications (from the list shown in Table A-1/F.126). The messages are forwarded by the MSSFU via the public telex network.

4.4 In the ship-to-ship direction calls between different ocean regions may be established via the international telex network and will follow the procedures for ship-to-shore calls.

The procedures for calls between ships within the same ocean region are not a matter for this Recommendation. See the Supplement No. 3 to the F-Series Recommendations.

5 Operational procedures

5.1 Shore-to-ship calls

5.1.1 One-stage selection

5.1.1.1 A terrestrial subscriber may place a call to the desired ship earth station using normal telex selection procedures with the designated telex destination code and the ship earth station number. Because it is an essential feature of this service that the called address is automatically passed forward by the telex network to the MSSFU, the subscriber achieves access to the unit and addresses the ship by a single stage of selection.

5.1.1.2 A telex subscriber calling a ship earth station will select a numbering sequence as follows:

58S	Telex destination code
4 M ₁ I ₂ D ₃ X ₄ ... X ₈	INMARSAT, mobile number

where 4 corresponds to the T-digit and where at least the digits M₁I₂D₃X₄X₅X₆ are part of the ship station identity in accordance with Recommendation F.125.

5.1.1.3 On receipt of this address, the MSSFU should check that the required ship is logged into the ocean region and should accept or reject the call accordingly. No call connect should be returned to the originating telex network until this check has been completed. The time period for the return of call connect and the subsequent answerback must be in accordance with the relevant U-Series Recommendations.

If this check fails, the appropriate service signal should be returned to the originator in accordance with Recommendation F.131.

5.1.1.4 The MSSFU shall return the answerback associated with the called ship earth station. The format of this answerback should be in accordance with Recommendation F.74.

5.1.1.5 The answerback associated with the called ship earth station shall always be returned in response to a WRU signal.

5.1.1.6 The answerback of the calling telex subscriber should be determined at the establishment of the call using procedures in accordance with § 9 of Recommendation F.72.

5.1.1.7 Where the calling answerback is not obtained at the beginning of the call, or if obtained but the determination of the calling address is not possible, the call should be cleared.

The call may be accepted where, in the event of non-delivery of a message, alternative arrangements for delivery are provided. The alternative arrangements, for example, may be the provision of a manual operator position.

5.1.1.8 At the completion of text transmission the connection should be cleared in accordance with normal telex procedures.

5.1.1.9 After the complete message has been received, the MSSFU shall attempt to deliver it at the earliest opportunity. However, the message should not be held for longer than 24 hours in accordance with § 3.3 of Recommendation F.72.

5.1.1.10 In the event of non-delivery of the message to the ship earth station, a non-delivery advice should be returned to the originating telex subscriber. The content of the non-delivery advice and procedures for its transmission should be in accordance with §§ 12, 13 and 14 of Recommendation F.72.

5.1.1.11 Telex selection information should be extracted from the calling telex answerback in accordance with Recommendation U.74.

5.1.1.12 The action to be taken when the MSSFU is unable to notify the originator of the non-delivery of their message is for further study.

5.1.2 *Two-stage selection*

5.1.2.1 The subscribers should use normal telex call establishment procedures to access the MSSFU, which is allocated a national number for this purpose.

5.1.2.2 Principles and procedures for access to the MSSFU shall be in accordance with §§ 6 and 7 of Recommendation F.72.

5.1.2.3 The information field content for the address line should be in accordance with § 8 of Recommendation F.72.

5.1.2.4 Enhanced Group Call facilities of the INMARSAT Standard-C system enable authorised users to send a message simultaneously to a number of ship earth stations which have been specially equipped. Where Enhanced Group Call facilities are provided, by the MSSFU, an additional five address attributes will be contained in the address line. These attributes (abbreviated addresses) are known as C-codes and will follow immediately after the end of address delimiter, Combination No. 26, with each C-code being delimited by a Combination No. 3. The address line will be terminated by the End of Address (EOA) signal in accordance with Recommendation F.72.

The general structure of the C-codes is defined in Supplement No. 3 to the F-Series Recommendations.

5.1.2.5 MSSFU access protocols shall be in accordance with Recommendation U.80. However, where the MSSFU acts only as an interface between the maritime message transmission system and a public telex network, only the INMARSAT mobile number need be input in the address field.

5.1.2.6 If the calling address cannot be determined from the calling subscriber's answerback for the purpose of delivering a non-delivery advice, the call should be cleared.

The call may be accepted where, in the event of non-delivery of a message, alternative arrangements for delivery are provided. The alternative arrangements, for example, may be the provision of an operator position.

5.1.3 *Abnormal conditions*

5.1.3.1 The action to be taken when abnormal conditions are encountered during message input shall be in accordance with § 10 of Recommendation F.72 where applicable.

5.2 *Ship-to-shore calls*

5.2.1 Shipboard subscribers to the Maritime-Satellite Service provided by the Standard-C system may send messages to the subscribers to public telex networks.

5.2.2 The messages are forwarded by the MSSFU to the addressed telex subscriber via the public telex network.

5.2.3 Upon delivery of the message to the telex destination, a delivery notification should be sent to the ship. In the event of non-delivery of the message to the telex destination, the action to be taken is not the subject for international standardisation.

5.2.4 The procedures for call establishment and delivery to the telex destination should be in accordance with §§ 12, 13 and 14 of Recommendation F.72.

5.3 *Ship-to-ship calls*

5.3.1 A shipboard subscriber to the Maritime-Satellite Service provided by the Standard-C system may send a message to a subscriber aboard another ship.

5.3.2 Where the call is to a ship in a different ocean region and the call transits the public telex network, the call procedures shall be in accordance with the ship-to-shore procedures set out in § 5.2 above.

In cases where the call is to a Standard-C ship earth station in the destination ocean region and the destination MSSFU does not support one-stage selection, the procedures to be used are for further study.

5.3.3 The procedures for calls between shipboard subscribers in the same ocean region are not a subject for this Recommendation. See Supplement No. 3 to the F-Series Recommendations.

Recommendation F.130

MARITIME ANSWER-BACK CODES

The CCITT,

considering

(a) that it is technically feasible to interconnect certain radiocommunication systems in the Maritime Mobile Service¹⁾ with the international telex network in order to provide a radiotelex service between ships and telex subscribers, in accordance with Recommendation F.110;

(b) that Recommendation F.60 specifies the operational provisions for the international telex service, and in particular, for the composition of answer-back codes;

(c) that, since no single Administration is responsible for the allocation of answer-back codes to ships in the way that such codes are administered in individual national telex networks, some rules further to those set down in Recommendation F.60 are desirable, for example to facilitate automatic operation in the ship-to-shore direction and to simplify the handling of inquiries concerning calls to or from ships;

(d) that, to the extent possible, the alphabetic portion of maritime answer-back codes should provide a means for detecting possible mutilation of the numerical portion, particularly in the case of ship-to-shore calls where it may be used for charging and accounting purposes,

unanimously declares

that, at least in cases where interconnection with the international telex network is desired, answer-back codes generated by teleprinters (or equivalent terminal devices) on ships shall comply with the following requirements.

1 Regardless of the transmission medium used (e.g. maritime-mobile satellite, HF "direct printing", VHF), the answer-back code, as printed out for a distant subscriber, shall include the following three components in the order indicated:

- a) the "ship station's number" of 6, 7, 8 or 9 digits (see § 2 below);
- b) the "ship's (abbreviated) name" of 4 letters (see § 3 below);
- c) the letter X, preceded by a space, as a "telex network identification code" reserved for mobile stations (see Recommendation F.68).

¹⁾ As in Recommendations F.110 and F.111, the term Maritime Mobile Service is intended to include also the Maritime Mobile-Satellite Service.

2 The 6, 7, 8 or 9 digits of the ship station's number are those allocated by the licensing Administration in accordance with Recommendation F.120 but with the final 3, 2 or 1 zeroes deleted for 6, 7 or 8-digit numbers respectively.

3 The letters comprising the ship's (abbreviated) name [§ 1b) above] should be chosen with the guidance and under the control of the licensing Administration with a view not only to identifying the ship (or the company, or the fleet, as is most appropriate) in a clear manner for a distant subscriber, but also to providing a means for checking the ship station's number as recorded in the answer-back code. The name should not include shifts, figures or signs. Where a ship has been allocated a 6, 7 or 8-digit number, in principle the ship's (abbreviated) name should not need to be changed when the numbering plan is modified to incorporate 7, 8 or 9-digit numbers.

4 The series of twenty combinations in International Telegraph Alphabet No. 2 comprising the answer-back code shall be allocated as follows:

- a) figure-shift, or (if permanently fitted) letter-shift;
- b) carriage-return;
- c) line-feed;
- d) the ship station's number, or (if a letter-shift is fitted in the first position) figure-shift followed by the ship station's number;
- e) letter-shift;
- f) space, which should however be omitted if both the ship station's number consists of 8 digits and a letter-shift is fitted in the first position;
- g) the ship's (abbreviated) name;
- h) space;
- i) if necessary, a letter-shift or letter-shifts to bring the total number of combinations in the answer-back code up to twenty;
- j) the letter X;
- k) letter-shift (if permanently fitted).

5 The technical requirements for answer-back generators are laid down in Recommendation S.6.

6 In accordance with Recommendation S.6, it is preferred that teleprinters having all 20 positions in the answer-back which are freely assignable should be used in the future, i.e. where the first position is a figure-shift and the last the letter X. In the meantime, teleprinters that have a letter-shift permanently fitted in the first and last positions of the answer-back code may be used where the ship station's number does not exceed 8 digits.

Recommendation F.131

RADIOTELEX SERVICE CODES

The CCITT,

considering

(a) that it is technically feasible to interconnect certain radiocommunication systems in the Maritime Mobile Service and the Maritime Mobile-Satellite Service with the international telex network in order to provide a radiotelex service between ships and telex subscribers in accordance with Recommendation F.110;

(b) that Recommendation F.60 specifies the code expressions used for service correspondence in the international telex service;

(c) that whilst it is desirable for the same service code expressions to be used in the radiotelex service as in the international telex service, because of the nature of the service the reasons for the uses of these codes may vary;

(d) that agreement as to the circumstances when specific codes are used is desirable,

recommends the following

(1) In general for shore-to-ship calls the telex service codes specified in Recommendation F.60 should be used. However, the telex service codes listed below should be used by the radiotelex service in the following circumstances:

- ABS** – *Absent subscriber/office closed* (to be used when radio contact cannot be established, i.e. radio equipment is faulty, the ship is outside the coverage area or the terminal is turned off);
 - DER** – *Out of order* (to be used when the radio path and associated handshaking procedure is accomplished normally but the teleprinter fails to respond to the **WRU** signals);
 - NC** – *No circuits* (to be used when congestion occurs in either the network or switching equipment);
 - NP** – *The called party is not or is no longer a subscriber* (to be used when the ship number received is invalid);
 - NA** – *Correspondence with this subscriber is not admitted* (to be used if the ship's number is barred or if unauthorized group calls are attempted);
 - OCC** – *Subscriber engaged* (to be used if the ship station is engaged).
- Note* – See also Recommendation U.61 [1].

(2) For ship-to-shore calls all service codes generated in the international telex service, as specified in Recommendation F.60, should be capable of being returned and presented to the calling ship subscriber.

Reference

- [1] CCITT Recommendation *Detailed requirements to be met in interfacing the international telex network with maritime satellite systems*, Recommendation U.61.

Recommendation F.140

POINT-TO-MULTIPOINT TELECOMMUNICATION SERVICE VIA SATELLITE

The CCITT,

considering

- (a) the need for a point-to-multipoint telecommunication service;
- (b) the loss of the HF multi-destinational Press broadcast service for this purpose;
- (c) the availability of satellites for point-to-multipoint telecommunications services on a regional and world-wide basis;
- (d) the availability of a multiplicity of earth station sizes;
- (e) the need for a clarification in terms of the functional elements of this service;
- (f) the need for the flexibility of their implementation in order to adapt to the needs of all Administrations,

recommends

the following operational guidelines and Quality of Service requirements for an international point-to-multipoint telecommunication service via satellite.

1 Scope¹⁾

This Recommendation provides operational guidelines and Quality of Service requirements for an international one-way point-to-multipoint telecommunication service via satellite. See Recommendation D.185 for the general tariff and accounting principles for the international point-to-multipoint telecommunication service via satellite.

1.1 Definition of service

The **international point-to-multipoint telecommunication service via satellite** is defined as a service provided to a customer by Administrations for the transmission for example, of text, photographs or data via a satellite for the reception at a multiplicity of destinations by receive-only earth stations.

2 Service description

2.1 Functional elements of service

A point-to-multipoint telecommunication service via satellite includes the seven following elements (see Figure 1/F.140);

- 1) the provider(s) of information;
- 2) the link between the provider(s) and the control management centre;
- 3) the control management centre which uses various transmission means in order to collect, address, and multiplex the information from the provider(s);
- 4) the transmit earth station(s);
- 5) the transponder of a satellite(s);
- 6) one or several receive earth stations;
- 7) the link(s) from the receive earth station(s) to the user(s) equipment.

2.2 Service provision

The service may be provided on either a full time 24-hour basis, a scheduled part-time basis (e.g., five hours per day), or occasional use basis (e.g., a special event), subject to such terms as may be agreed between Administrations.

2.3 Types of service

The service may be provided:

- a) in the form of one or more analogue channels, the bandwidth of which may lie anywhere within the maximum available bandwidth of one transponder, or
- b) in the form of one or more digital channels operating at any speed within the maximum available digital capacity of one transponder.

2.4 Areas of service coverage

The service may be provided on a regional or global basis depending on customer requirements and satellite capability.

2.5 Service configurations

As illustrated in Figure 1/F.140, there are seven (7) functional elements in the provision of a point-to-multipoint telecommunication service via satellite. Owing to the need for flexibility, the systems may be adapted to a diversity of needs and the regulations of each Administration involved.

¹⁾ Multipoint-to-point and two-way multiple access services are not addressed in this Recommendation, and are subject to further study.

The conditions of use of the transmit (4) and receive (6) earth stations and the links (2) conveying the information flow remain a national matter to be determined by the competent authority in each country.

The conditions of use of the space segment (5) are defined by the organizations (INTELSAT, EUTELSAT, etc.) in charge of their provision and by whatever agreements on coordination made by the competent international organizations.

The control management centre (3) for the service may be located and/or operated with the transmit earth station, the provider of the information or independently of these two entities.

3 Quality of Service

The efficiency of operation and therefore the Quality of Service provided to the users are linked to the relationship of all parties which contribute to the provision of the service, i.e. the technical equipment and the entities in charge of their operation. Quality of Service parameters and values are for further study based on operational experience.

3.1 Service availability

Service availability is the ratio of aggregate time during which satisfactory or tolerable service is or could be provided, to the total observation period (Recommendation X.140, definition).

As this availability of service depends on the class of space segment, the earth station configurations, the propagation and interference effects and the bit error ratio required, it is not possible to specify a service availability requirement for all point-to-multipoint telecommunication services via satellite. The service availability for each customer will have to be calculated on an individual case basis considering all the points mentioned above.

4 Access

4.1 Transmit

The point of interconnection to the service may be located at the providers' location or on the Administrations' premises. When the point of interconnection to the service is located on the Administrations' premises, the providers' access may be via a lease circuit or a public switched network.

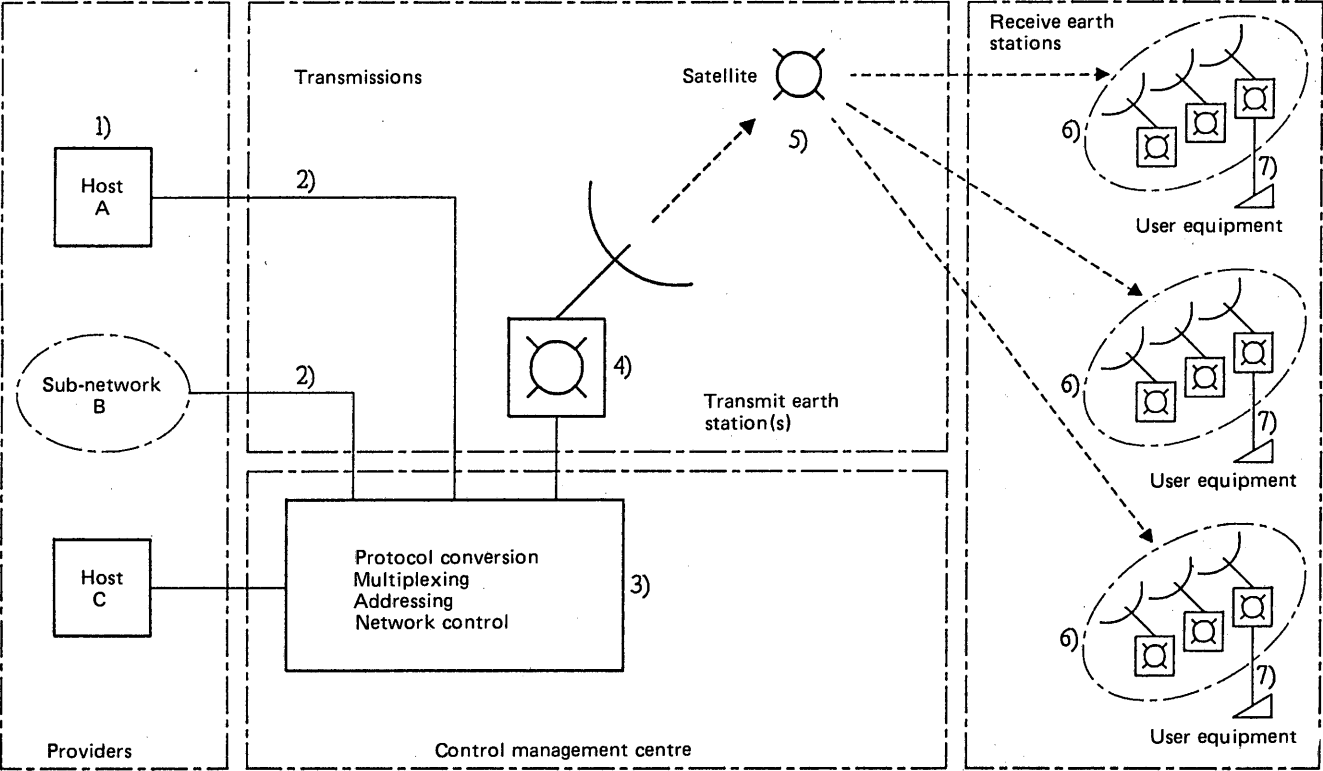
4.2 Receive

The receive earth station(s) may be located on the users premises or at Administrations' premises. Where the receive earth stations are located at the Administration's premises, access to the user should be via direct connection. The user of a public switched network is for further study.

5 Classes of space segment

Services offered may take account of classes of space segment available from the space segment provider(s). The following classes of space segment may be utilized to provide service:

- a) *non-pre-emptible* – A service which may not be interrupted or terminated for the provision of a service to another customer. There are two types of non-pre-emptible service:
 - 1) *protected* – A service for which restoration is guaranteed; and
 - 2) *unprotected* – A service for which restoration is not guaranteed and which may only be restored subject to availability of an alternate facility;
- b) *pre-emptible* – A service which may be interrupted to provide a service of higher priority.



T0100090-87

FIGURE 1/F.140

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

SECTION 11

SUPPLEMENTS TO THE SERIES F RECOMMENDATIONS

Supplement No. 1

DEFINITIONS RELATING TO TELEGRAPH, TELEMATIC AND DATA TRANSMISSION SERVICES¹⁾

CONTENTS

1 *General definitions*

1.1 *Telematic services*

- 1.1.1 Telematic services
- 1.1.2 Teletex service
- 1.1.3 Public facsimile service
- 1.1.4 Videotex service
- 1.1.5 Message Handling service²⁾

1.2 *Non-telematic services*

- 1.2.1 Public data transmission service
- 1.2.2 Public telegram service

1.3 *Terms and definitions on videography*

- 1.3.1 Videography
- 1.3.2 Broadcast videography, teletext
- 1.3.3 Videotex, interactive videography

¹⁾ The study of terminology work by Study Group I in the 1989-1992 study period is covered by a revised Question 3/I.

²⁾ The definition of Message Handling service as a telematic service and the use of the term public in the definitions of telematic services is for further study.

- 2.1 *Working Party I/1* (telex, radiotelex and mobile telematic services)
 - 2.1.1 International store-and-forward
 - 2.1.2 Interconnected store-and-forward
 - 2.1.3 International transit store-and-forward
 - 2.1.4 Interconnected transit store-and-forward
 - 2.1.5 Draft terms and definitions on telex
- 2.2 *Working Party I/2* (telegram and message switching services)
- 2.3 *Working Party I/3* (teletex service)
 - 2.3.1 Common definitions
 - 2.3.2 Definitions of terms related to interworking
 - 2.3.3 Mixed mode of operation
- 2.4 *Working Party I/4* (facsimile and telewriting)
 - 2.4.1 Facsimile
 - 2.4.2 Classes of Group 4
 - 2.4.3 Telefax
 - 2.4.4 FAX 4
 - 2.4.5 Bureaufax
 - 2.4.6 Public telefax station
- 2.5 *Working Party I/5* (videotex service)
 - 2.5.1 Videotex service
 - 2.5.2 Videotex service profile
 - 2.5.3 Videotex service facility
 - 2.5.4 Videotex information retrieval
 - 2.5.5 Videotex transaction
 - 2.5.6 Videotex messaging [videotex message handling]
 - 2.5.7 Videotex conferencing [videotex terminal-to-terminal messaging]
 - 2.5.8 Videotex data processing
 - 2.5.9 Videotex service provider
 - 2.5.10 Videotex information provider
 - 2.5.11 Videotex terminal
 - 2.5.12 Videotex host computer
 - 2.5.13 Videotex service centre
 - 2.5.14 Videotex gateway
 - 2.5.15 External videotex host computer
 - 2.5.16 Videotex frame
 - 2.5.17 Videotex page

1 General definitions

1.1 Telematic services

1.1.1 telematic services

F: services télématiques

S: servicios de telemática (servicios telemáticos)

International telecommunication services, excluding telephone, telegraph and data transmission services, offered by Administrations and defined by CCITT for the purpose of exchange of information via telecommunication networks.

Note 1 – The definition of service covers the full range of functions according to the Open System Interconnection (OSI) model.

Note 2 – Examples of telematic services are teletex service, facsimile service, Message Handling services and videotex service.

Note 3 – The term “teleservice” belongs to the concept of ISDN. Telematic services provided on an ISDN may be considered as teleservices.

1.1.2 teletex service

F: service télétext

S: servicio teletex

An international telematic service offered by Administrations enabling subscribers to exchange correspondence via telecommunication networks.

1.1.3 public facsimile service

F: service public de télécopie

S: servicio público facsímil

An international telematic service offered by Administrations for the purpose of transmitting documents between facsimile terminals via telecommunication networks.

Note – The subdivision of this service is described in Recommendation F.160.

1.1.4 videotex service

F: service vidéotex

S: servicio videotex

A videotex service is an interactive service which provides, through appropriate access by standardized procedures, for users of videotex terminals to communicate with data bases via telecommunication networks.

Note – The videotex service includes the following set of characteristics:

- 1) information is generally in an alphanumeric and/or pictorial form;
- 2) information is stored in a data base;
- 3) information is transmitted between the data base and users by telecommunication networks;
- 4) displayable information is presented on a suitably modified television receiver or other visual display device;
- 5) access is under the user's direct or indirect control;
- 6) the service is easily operated by the general public as well as specialist users, i.e. the service is user-friendly;
- 7) the service provides facilities for users to create and modify information in the data bases;
- 8) the service provides data base management facilities which allow information providers to create, maintain and manage data bases and to manage closed user group facilities.

1.1.5 **message handling service**

F: service de messagerie

S: servicio de tratamiento de mensajes

A service provided by the means of message handling systems.

Note 1 — The service may be provided through administration management domains or private management domains.

Note 2 — Examples of Message Handling services are:

- Interpersonal Messaging service (IPM service)
- Message Transfer service (MT service).

1.2 *Non-telematic services*

1.2.1 **public data transmission service**

F: service public de transmission de données

S: servicio público de transmisión de datos

A data transmission service established and operated by Administrations and provided by means of a public network. Circuit switched, packet switched and leased circuit data transmission services are specified.

Note 1 — A public data transmission service may be subdivided into derived services.

Note 2 — A public data transmission service or a derived service consists of service elements forming a basic service and of other service elements which are called optional user facilities.

Note 3 — There is an implicit definition of data transmission services in Recommendations X.1 and X.2.

1.2.2 **public telegram service**

F: service public des télégrammes

S: servicio público de telegramas

The *telegraph service* offered by Administrations to the public for the transmission of *telegrams* and their delivery to the addressee.

Note — The service provides for the exchange of various classes of telegrams.

1.3 *Terms and definitions on videography*

1.3.1 **videography**

F: vidéographie

S: videografía

A form of telecommunication in which information generally in the form of digital data is transmitted in order to permit the selection and display of textual or pictorial information to a user on a visual display unit, for instance on the screen of a television receiver.

Note — Teletex and other forms of telegraphy are not forms of videography.

1.3.2 **broadcast videography, teletext**

F: vidéographie diffusée, télétexte

S: videografía radiodifundida, teletexto

Videography in which information is broadcast in a structured sequence within the framework of a television signal, and the desired part of this information is selected by the user.

Note 1 — Information may be transmitted simultaneously with normal television pictures.

Note 2 — The terms “teletext” and “teletex” refer to two different concepts.

1.3.3 videotex, interactive videography

F: vidéographie interactive, vidéotex

S: videotex, videografia interactiva

Videographic service in which telecommunication networks are used for transmission of the user's requirements as well as the answers to his requests.

2 Definitions from different Working Parties³⁾

2.1 Working Party I/1 (telex, radiotelex and mobile telematic services)

2.1.1 international store-and-forward

F: enregistrement et retransmission au niveau international

S: almacenamiento y retransmisión internacional

Where a subscriber in country A accesses the store-and-forward unit in country B for the transmission of messages to that country.

2.1.2 interconnected store-and-forward

F: enregistrement et retransmission avec interconnexion

S: almacenamiento y retransmisión con interconexión

Where the store-and-forward unit in country A is connected to the store-and-forward unit in country B for the transmission of messages between the two countries.

2.1.3 international transit store-and-forward

F: enregistrement et retransmission en transit au niveau international

S: almacenamiento y retransmisión internacional en tránsito

Where a subscriber in country A accesses a store-and-forward unit in country B for the transmission of messages to other countries.

2.1.4 interconnected transit store-and-forward

F: enregistrement et retransmission en transit avec interconnexion

S: almacenamiento y retransmisión en tránsito con interconexión

Where the store-and-forward unit in country A accesses the store-and-forward unit in country B for further transmission of messages to other countries.

2.1.5 Draft terms and definitions on telex

Reference should be made to Supplement No. 2 for draft terms and definitions on telex, which will be studied, inter alia, under Question 7/I in the 1989-1992 study period.

2.2 Working Party I/2 (telegram and message switching services)

The definitions for the terms "store and forward", "message switching" and "message handling" are for further study.

³⁾ The Working Parties mentioned refer to the Study Group I organization during the 1981-1984 study period. The definitions in § 2 are relevant to the scope of each specialist area only.

2.3 Working Party I/3 (teletex service)

2.3.1 Common definitions

For the list of terms and definitions used in the teletex service, refer to Annex B to Recommendation F.200.

2.3.2 Definitions of terms related to interworking

Note – The terms below are provisional, and can also be found in Annex C to Recommendation F.201.

2.3.2.1 interworking

F: interfonctionnement

S: interfuncionamiento

Same as B.7 definition in Annex B to Recommendation F.200.

2.3.2.2 conversion facility (CF)

F: unité de conversion (UC)

S: unidad de conversión (UC)

Fully automatic system performing the necessary conversion between the teletex service and the telex service (see Recommendation F.201, § 2.1).

2.3.2.3 one-stage/two-stage selection procedure for telex to teletex direction of interworking

F: procédures avec la sélection en une ou deux étapes pour l'interfonctionnement dans le sens téléx vers téléx

S: procedimientos con marcación mono o bietapa para el interfuncionamiento de télex a teletex

Addressing of the teletex terminal by the telex terminal can be done, either by sending the total selection information in one phase to the CF or by calling first the CF (first stage of the selection), and by sending the teletex address after the connection to the CF has been established (second stage of the selection).

2.3.2.4 store-and-forward conversion facility (CF using store-and-forward principles)

F: unité de conversion avec enregistrement et retransmission (UC utilisant les principes d'enregistrement et retransmission)

S: unidad de conversión con almacenamiento y retransmisión (UC que utiliza los principios de almacenamiento y retransmisión)

CFs that “store” the received telex (or teletex) messages before “forwarding” them to the called teletex (or telex) terminal (see Recommendation F.201, § 3.1 and § 4; see also § 2.3.2.5 below).

2.3.2.5 real-time conversion facility (real-time interworking)

F: unité de conversion en temps réel (interfonctionnement en temps réel)

S: unidad de conversión en tiempo real (interfuncionamiento en tiempo real)

Such a CF shall transfer a message, in a unique communication, from a telex terminal to a teletex terminal, and from a teletex terminal to a telex terminal, without storage of the message (see Recommendation F.201, § 3.2).

2.3.2.6 validation of the called teletex terminal [validation result (positive or negative)]

F: validation du terminal téléx demandé [résultat de la validation (positive ou négative)]

S: validación del terminal teletex llamado [resultado de validación (positivo o negativo)]

This validation is performed by the CF to verify that the teletex terminal is an available one, i.e. either the teletex terminal has been called with this address (validation call) or this address has been controlled in a data base (see Recommendation F.201, § 4.1.3).

2.3.2.7 message deposit/message delivery (text deposit/delivery)

F: dépôt du message/remise du message (dépôt du texte/remise)

S: depósito de mensaje/entrega de mensaje (depósito/entrega de texto)

The message “deposit” is the sending by the calling terminal of the whole message to the store and forward CF before its further “delivery” to the called terminal (see Recommendation F.201, §§ 2.4.5 and 2.4.6).

2.3.2.8 on-line delivery acknowledgement : (ODA)

F: avis de remise de ligne

S: acuse de recibo de entrega en línea (ODA)

The on-line delivery acknowledgement facility gives to the waiting telex (i.e. having maintained the connection with the CF after its message deposit) the opportunity to receive “on-line” a proof of the CF’s message delivery to the teletex terminal, provided the call establishment to the teletex terminal has been performed within 30 seconds counted after the end of the message input (see Recommendation F.201, Note 10 to Figure 2/F.201, Note 9 to Figure 5/F.201 and § 4.1.6).

2.3.2.9 non-delivery notification (NDN)/positive delivery notification : (PDN)

F: avis de non-remise (NDN)/avis de remise (PDN)

S: notificación de no entrega (NDN)/notificación de entrega positiva (PDN)

If the CF has not been able to deliver the message to the called terminal despite the performance of a defined cycle of delivery attempts on the called terminal network (each network has a specific cycle) and within a maximum of a T2-defined duration, the CF should send an NDN to the calling user to indicate to him that his message has not been delivered to the called terminal and that no further delivery action will be taken by the CF (see Recommendation F.201, §§ 3.1.3.4 and 4.1.6).

Note 1 – The NDN facility is not provided in the first method of interworking for the telex to teletex direction (see Recommendation F.201, §§ 3.1.1, 3.1.2, 3.2.1 and 3.2.2).

Note 2 – The PDN facility, i.e. the ability of the CF to send back a proof of the delivery, is for further study.

2.3.2.10 Specific glossary to one-stage selection procedure

CF prefix

F: préfixe de l'UC

S: prefijo de UC

In the first method of interworking, the “CF prefix” is the special number (up to 7 digits) to be put before the called teletex number, to indicate that the total telex selection is for reaching a teletex terminal (see Recommendation F.201, §§ 3.1 and 3.2).

2.3.2.11 Specific glossary to two-stage selection procedure

i) CF national number

F: numéro national de l'UC

S: número nacional de UC

In the second method of interworking, the “CF national number” is the national telex number of the CF, given to the called telex users at the beginning of the telex delivery phase of the teletex to telex exchange for further use of interworking with the teletex of the CF’s country (see Recommendation F.201, § 4).

ii) input message acknowledgement (IMA)

F: accusé de dépôt (IMA)

S: acuse de recibo de mensaje introducido (IMA)

The IMA message sent by the CF to the telex user is used to indicate that the message has been well received by the CF and to give to the telex user a unique reference for this message. This reference should be used again when sending an NDN (see Recommendation F.201, § 4.1.5).

2.3.3 mixed mode of operation

F: mode d'exploitation mixte

S: modo mixto de explotación

In the teletex service, the mixed mode of operation provides the user, in addition to the basic features of the teletex service, with means for transferring documents containing graphical information encoded using techniques other than those defined for the basic teletex service.

2.4 Working Party I/4 (facsimile and telewriting)

2.4.1 Facsimile

Facsimile terminal (facsimile machine)

group (of facsimile terminals)

F: groupe (de télécopieurs)

S: grupo (de terminales facsímil)

Set of compatible facsimile terminals which conform to certain CCITT Recommendations.

2.4.1.1 group 2

F: groupe 2

S: grupo 2

Facsimile terminals which ensure the transmission of an A4 document in 3 minutes over the public telephone network and which conform to CCITT Recommendation T.3.

2.4.1.2 group 3

F: groupe 3

S: grupo 3

Facsimile terminals which ensure the transmission of an A4 document in about 1 minute over the public telephone network and which conform to CCITT Recommendation T.4.

2.4.1.3 group 4

F: groupe 4

S: grupo 4

Facsimile terminals mainly intended for operation on public data networks but also usable on the public telephone network and conforming to CCITT Recommendation T.5.

2.4.2 Classes of group 4

There are three classes of group 4 facsimile terminals:

- i) *Class I* – Minimum requirement is a terminal able to send and receive documents containing facsimile encoded information (in accordance with Recommendation T.6 and T.73).
- ii) *Class II* – Minimum requirement is a terminal able to transmit documents which are facsimile encoded (in accordance with Recommendations T.6 and T.73). In addition, the terminal must be capable of receiving documents which are facsimile coded (in accordance with Recommendations T.6 and T.73) or teletex coded (in accordance with the basic coded character repertoire as defined in Recommendation T.61) and mixed-mode documents (in accordance with Recommendation T.73).
- iii) *Class III* – Minimum requirement is a terminal which is capable of generating, transmitting and receiving facsimile coded documents (in accordance with Recommendations T.6 and T.73), Teletex coded documents (in accordance with the basic coded character repertoire as defined in Recommendation T.61) and mixed mode documents (in accordance with Recommendation T.73).

2.4.3 **telefax**

F: téléfax

S: telefax

International public facsimile service between subscriber stations on the public switched telephone network or on circuits intended for DATEL (Recommendation F.180, § 5).

2.4.4 **FAX 4**

F: FAX 4

S: FAX 4

International facsimile service between subscribers with Group 4 terminals (see Recommendation F.161).

2.4.5 **bureaufax**

F: bureaufax

S: burofax

International public facsimile service between public bureaux (see Recommendation F.170). Administrations may adopt another more commercial name (for example, Publifax) for the bureaufax service which they offer to their users.

2.4.6 **public telefax station**

F: poste téléfax public

S: estación telefax pública

Equipment made available to the public by an Administration for the operation of the telefax service, comprising a facsimile terminal and access to the appropriate networks. These facsimile terminals may be used exclusively for transmission or reception, or for both transmission and reception (see Recommendation F.180, § 5).

2.5 **Working Party I/5 (videotex service)**

(Note – These definitions are based on the ones contained in Recommendation F.300.)

2.5.1 **videotex service**

F: service vidéotex

S: servicio videotex

A videotex service is an interactive service which provides, through appropriate access by standardized procedures, for users of videotex terminals to communicate with data bases via telecommunication networks.

The videotex service includes the following set of characteristics:

- 1) information is generally in an alphanumeric and/or pictorial form;
- 2) information is stored in a data base;
- 3) information is transmitted between the data base and users by telecommunication networks;
- 4) displayable information is presented on a suitably modified television receiver or other visual display device;
- 5) access is under the user's direct or indirect control;
- 6) the service is easily operated by the general public as well as specialist users, i.e. the service is user-friendly;
- 7) the service provides facilities for users to create and modify information in the data bases;
- 8) the service provides data base management facilities which allow information providers to create, maintain and manage data bases and to manage closed user group facilities.

2.5.2 **videotex service profile**

F: profil du service vidéotex

S: perfil del servicio videotex

A videotex service profile is the set of functionalities required by videotex service.

2.5.3 videotex service facility

F: services complémentaires vidéotex

S: facilidad del servicio videotex

A videotex service facility is an application layer implementation in a videotex service, providing a specific, clearly defined facility to videotex users. Videotex service provides users with a number of such service facilities.

2.5.4 videotex information retrieval

F: recherche d'information vidéotex

S: recuperación de información videotex

A videotex service facility in which a user obtains information by means of a dialogue with a data base.

2.5.5 videotex transaction

F: transactions vidéotex

S: transacción videotex

A videotex service facility which allows users to create and/or modify information stored in a data base. Access to these facilities will generally require special functions and procedures to authenticate the authority to access. This service facility includes, but is not limited to, transactions leading to or influencing a commercial relationship between users and information providers.

2.5.6 videotex messaging [videotex message handling]

F: messagerie vidéotex [traitement des messages vidéotex]

S: mensajería videotex [tratamiento de mensajes videotex]

A videotex service facility which allows users to communicate with each other by storing messages in a commonly accessible database. These stored messages may either be retrieved by the user or delivered automatically.

2.5.7 videotex conferencing [videotex terminal-to-terminal messaging]

F: conférence vidéotex [services de messages entre terminaux vidéotex]

S: conferencia videotex [mensajería entre terminales videotex]

A videotex service facility which, by providing routing and switching functions, enables users or terminals to send and receive messages in a conversational manner. This does not preclude direct terminal-to-terminal messaging using existing networks.

2.5.8 videotex data processing

F: traitement des données vidéotex

S: procesamiento de datos videotex

A videotex service facility which allows the user to employ processing and storage capacity either at the host computer or by downloading a program or other data into suitable videotex terminal equipment.

2.5.9 videotex service provider

F: prestataire de service vidéotex

S: proveedor del servicio videotex

A videotex service provider is a party responsible to the user for the provision and operation of a videotex service.

2.5.10 videotex information provider

F: fournisseur d'information vidéotex

S: proveedor de información videotex

A videotex information provider is a party responsible by agreement with a videotex service provider for providing information or transaction facilities to videotex service users. The information provider may or may not operate the host computer on which the data base is stored.

2.5.11 videotex terminal

F: terminal vidéotex

S: terminal videotex

A videotex terminal is the equipment by means of which the user interacts with the videotex service. The terminal may also provide a direct terminal-to-terminal capability, and may include other components, such as a hard copy output unit, magnetic or optical storage devices, and additional processing and/or storage devices.

2.5.12 videotex host computer

F: ordinateur principal vidéotex

S: ordenador (computador) principal videotex

A videotex host computer is a computer (or network of computers provided by a single party) on which one or more data bases are stored and/or one or more other videotex service facilities are provided.

2.5.13 videotex service centre

F: centre de service vidéotex

S: centro de servicio videotex

A videotex service centre is a computer used by the videotex service provider to authorize access to a videotex service. Other functions of the service centre may include assistance to users in selecting the particular data base required (either provided by the service centre or by other host computers), as well as management facilities such as billing, statistics gathering, etc. The same computer may also be a host computer and/or provide a gateway function.

2.5.14 videotex gateway

F: accès multiple vidéotex

S: función de multiacceso videotex (cabecera videotex)

A videotex gateway is a function of a computer providing access to data base(s) of other host computer(s). This may include selection and/or protocol conversion and/or dialogue handling functions.

2.5.15 external videotex host computer

F: ordinateur principal externe vidéotex

S: ordenador principal videotex externo

An external videotex host computer is a host computer not operated by the videotex service provider.

2.5.16 videotex frame

F: feuillet vidéotex

S: trama videotex

The information that is retrieved by a single user function from a terminal and presented as a complete entity by the terminal (full screen contents or parts of the screen e.g. areas on the screen) but may include information that requires scrolling before it is displayed and may include dynamic effects such as overwriting. Local user action may take place within a frame.

2.5.17 videotex page

F: document vidéotex

S: página videotex

A videotex page is an organized set of one or more frames.

TERMS AND DEFINITIONS FOR TELEX

This Supplement contains terms and definitions for use in the telex service. Most terms bear an International Electrotechnical Vocabulary (IEC) number which follows the definition.

1 telex conversation mode

F: conversation télex

S: modo conversacional télex

The use of a telex connection for a dialogue or exchange of information between two *terminals*.

721.53.05

2 access to the public telegram service

F: accès au service public des télégrammes

S: acceso al servicio público de telegramas

Provision for a *telex terminal* to send and receive *telegrams* to and from the *public telegram service*.

721.53.07

3 user class-of-service

F: catégorie d'utilisateur

S: clase de servicio de usuario

The category that defines the characteristics of a call available to a user of a public telecommunication service.

Note — The characteristics for a user class of service could be, for example, *binary rate*, terminal operating mode, code structure, *access barred*.

721.53.08

4 public telex booth

F: cabine publique télex

S: cabina telex pública

Telex *terminal* available to the public (i.e. non-subscribers).

721.53.09

5 outgoing only terminal

F: terminal spécialisé en départ

S: terminal de salida solamente

A *terminal* that can make outgoing calls to the network but which is prevented from receiving incoming calls.

721.53.10

6 incoming only terminal

F: terminal spécialisé en arrivée

S: terminal de llegada solamente

A *terminal* that can receive incoming calls from the network but which is prevented from making outgoing calls.

721.53.11

7 access barred

F: interdiction

S: prohibición de acceso

A function of a telecommunication network that bars calls to or from certain subscribers, from or to certain services, routes or *terminals*.

721.53.12

8 restricted service

F: service restraint

S: servicio restringido

A service whereby a subscriber may have *access barred* from his terminal installation to certain services, routes or *terminals* which would normally be accessible to all customers.

721.53.13

9 priority

F: priorité relative

S: prioridad relativa

The possibility of setting up a call from a nominated *terminal* on a *private network* or *closed user group*, by assigning to it, at each stage of selection, priority over all other calls of lower priority that are in the process of being established. The possibility may apply either to every call or only to nominated calls from such a privileged terminal.

721.53.14

10 absolute priority

F: priorité absolue

S: prioridad absoluta

The possibility of setting up a call from a nominated *terminal* on a *private network* or *closed user group*, by assigning to it at each stage or certain stages of selection, priority over all other calls of lower priority that are established. The possibility may apply either to every call or only to nominated calls from such a privileged terminal.

721.53.15

11 priority for called subscriber

F: abonné prioritaire en demandé

S: prioridad del abonado llamado

A subscriber who has the facility of *priority* or *absolute priority* for all calls or for certain calls only to his *terminal*. This facility is activated by the sending of an appropriate signal by the calling terminal.

Note — There may be several priority levels, each conferring relative or absolute priority with respect to lower levels.

721.53.16

12 in-local override

F: priorité sur le fonctionnement en local

S: anulación del funcionamiento en local

A facility of the network to override a *terminal* working *in local*, for the purpose of connecting an incoming call to that terminal.

721.53.17

13 direct outgoing selection

F: prise directe

S: selección directa de salida

A facility that permits a *terminal* in a *private network* to set up a call to another network without human intervention in the private network.

721.53.18

14 direct incoming selection

F: sélection directe à l'arrivée

S: selección directa de llegada

A facility that permits a *terminal* in a telex network to set up a call to a terminal designated by the caller in a *private network* without human intervention in the private network.

721.53.19

15 direct incoming selection with integrated numbering

F: sélection directe à l'arrivée avec numérotation intégrée

S: selección directa de llegada con numeración integrada

Direct incoming selection using a single *selection sequence* made up from certain figures (digits) identifying the *private network* followed by certain figures identifying the called *terminal* in that network. The complete sequence of figures constitute a complete *address* integrated into the numbering plan of the telex network.

721.53.20

16 direct incoming selection with two-stage selection

F: sélection directe à l'arrivée avec numérotation en deux temps

S: selección directa de llegada con marcación bietapa

Direct incoming selection using two *selection sequences* to select the required *terminal* in the *private network*. The first sequence identifies the private network, the second sequence identifies the terminal in this network. Only the first sequence is integrated into the numbering plan of the telex network.

721.53.21

17 closed user group

F: groupe fermé d'usagers

S: grupo cerrado de usuarios

A user group on the public switched network whose *terminals* have the facility to communicate only with each other.

Note — A terminal may belong to more than one closed user group.

721.53.22

18 partially closed user group

F: groupe partiellement fermé d'usagers

S: grupo de usuarios parcialmente cerrado

A user group where certain terminals may make calls to or receive calls from any other terminals normally accessible in the public switched network, the other terminals having the facility to communicate only with the user of the group.

Note — In some cases the external access for nominated terminals is limited to outgoing calls.

721.53.23

19 user facility

F: service complémentaire

S: facilidad de usuario

A facility which may be provided on request to a user of the telecommunication network in addition to the normal service provided.

Note — A user facility may be provided on a per call basis or for an agreed period of time.

721.53.25

20 automatic calling

F: appel automatique

S: llamada automática

The sequence of operations required by the network procedure to set up a connection without manual intervention at the calling *terminal*.

721.53.26

21 automatic answering

F: réponse automatique

S: respuesta automática

Answering in which the called terminal automatically responds to the *calling signal* and the call may be established whether or not the called terminal is attended.

721.53.27

22 manual answering

F: réponse manuelle

S: respuesta manual

Answering in which a call is established only if the called user signals his readiness to receive it by means of a manual operation.

721.53.28

23 automatic identification

F: identification automatique

S: identificación automática

The transmission without manual intervention of the identification of the calling *terminal* to the connected terminal or vice versa, or the identification of terminals to one another when a connection is established.

Note — The identification may be provided by the network or by the terminal.

721.53.29

24 line identification by the network

F: identification de ligne par le réseau

S: identificación de línea por la red

Transmission by the network, in response to a request from either of two connected parties, of an appropriate line or address identification.

721.53.30

25 automatic date and time indication

F: indication automatique de date et d'heure

S: indicación automática de fecha y hora

Automatic indication by the network of data and time of the commencement of a call either to the calling *terminal* or to both the calling and the called terminals.

721.53.31

26 indication of duration

F: indication de durée

S: indicación de duración

The indication by the network to the paying *terminal* of the chargeable time of a call prior to the release of the paying terminal or by recall at a convenient time.

Note – This information may be provided automatically or on demand.

721.53.32

27 indication of charge

F: indication de taxe

S: indicación del importe de la comunicación

The indication by the network to the paying *terminal* of the charge of a call prior to the release of the paying terminal or by recall at a convenient time.

Note – This information may be provided automatically or on demand.

721.53.33

28 statement of call account

F: décompte de taxes de communications

S: estado de cuentas de comunicaciones

The sending by the network upon request of a subscriber, an Administration, *closed user group* or *private network*, of a detailed account of his call charges either since his last request or over a nominated period.

721.53.34

29 shared terminal

F: terminal partagé

S: terminal compartido

A facility offered to certain subscribers permitting the use of the same *terminal*, sharing the corresponding costs and charges.

721.53.35

30 accounts for shared terminal

F: décompte pour terminal partagé

S: cuentas de un terminal compartido

Provision of separate accounts to users of a *shared terminal*.

721.53.36

31 storage of call content

F: archivage des messages

S: almacenamiento del contenido de las comunicaciones

The storage for a specified length of time by the network at the subscriber's request of the contents of some or all of his calls sent or received.

721.53.37

32 retrieval of stored call content

F: consultation d'archivage

S: consulta del contenido almacenado de las comunicaciones

The transmission of the call contents to subscribers who had previously requested *storage of all content*.

721.53.38

33 statistics on request

F: statistiques sur demande

S: estadísticas a petición

Provision for the network to send to the subscriber at this request, details of his calls under defined headings, e.g. international calls, national calls, calls to certain subscribers or total of all calls.

721.53.39

34 recorded message

F: réponse par message enregistré

S: mensaje registrado

A facility provided by the called subscriber or terminating network, whereby incoming calls to that subscriber may be connected to a transmitter for recorded *messages*.

721.53.40

35 camp-on : connect when free

F: attente sur occupation

S: conexión tras liberación

The holding by the network of a call attempt that was unsuccessful due to the called *terminal(s)* being busy or due to network congestion, with subsequent automatic connection as soon as possible.

721.53.41

36 camp-on with recall

F: attente sur occupation avec rappel

S: conexión tras liberación con rellamada

A *camp-on* with the release of the calling *terminal* and recall as soon as possible.

721.53.42

37 absent subscriber service (in telegraphy and data communication)

F: service des abonnés absents (en télégraphie et transmission de données)

S: servicio de abonado ausente (en telegrafia y comunicación de datos)

A facility that permits the calling *terminal* to be advised automatically by a *service signal* that, due to an action of the called subscriber, the latter's terminal is not available for calls.

721.53.43

38 call re-direction

F: renvoi d'appel

S: redireccionamiento de la llamada

A facility that permits a call to be redirected to a previously nominated alternative destination upon the request of the called subscriber with advice by a *service signal* to the calling terminal.

721.53.44

39 changed address interception

F: intervention pour transfert d'abonné, intervention pour changement de numéro d'appel

S: interceptación de cambios de dirección

Automatic advice provided by the network to a calling *terminal* of a called terminal's new address followed either by *call redirection* or by release of the calling terminal.

Note — It is also possible to simply send a *service signal* followed by release.

721.53.45

40 store-and-forward

F: enregistrement et retransmission

S: almacenamiento y retransmisión

The process of storing *messages* or parts of messages and their subsequent transmission to the designated address or addresses.

721.53.46

41 storage installation

F: installation d'enregistrement

S: instalación de almacenamiento

An installation that provides a *store-and-forward* function.

Note — This installation may be provided at a *terminal* or at a centralized installation.

721.53.47

42 redirection address

F: adresse de réacheminement

S: dirección de redireccionamiento

Information sent in the backward direction consisting of a number of *address* signals indicating the complete address to which the call is to be or has been redirected.

721.53.48

43 delayed delivery

F: remise différée

S: entrega diferida

A *store-and-forward* process in which the re-transmission of stored *messages* is delayed until a predetermined period.

721.53.49

44 message priority

F: priorité des messages

S: prioridad de los mensajes

A facility within a *store-and-forward*, or *message switching* system that enables a subscriber to attach to his *message* one of a number of levels of priority which has been provided.

721.53.50

45 message spacing

F: espacement des messages

S: separación de los mensajes

A facility whereby a subscriber may request the network to transmit several *line feed* characters to his *terminal* at the end of each successful call, before clear down, for the purpose of providing a blank space between adjacent printed *messages*.

721.53.51

46 header

F: en-tête

S: encabezamiento

The initial part of a *message* or *packet* which contains the service information.

721.53.52

47 booked call

F: appel à heure fixe

S: llamada a hora convenida

A process whereby a subscriber may have his *terminal* called by the network at a given time, with or without an audible signal.

721.53.53

48 network recall

F: rappel du réseau

S: rellamada a la red

The recall of the network by a subscriber during the *message* phase of the call to request facilities.

721.53.54

49 multi-address call

F: communication à destinations multiples

S: comunicación multidireccional

A call set up by the network in which more than one called *terminal* is involved.

721.53.55

50 conference call

F: communication de conférence

S: comunicación conferencia

A *multi-address call* in which the signals which may be transmitted by any one of the terminals are received simultaneously by all other *terminals*.

Note — The order in which the terminals may transmit shall be mutually agreed.

721.53.56

51 broadcast call

F: communication de diffusion

S: comunicación de difusión

A *multi-address call* in which signals are transmitted simultaneously by the calling *terminal* to all the called terminals.

721.53.57

52 restricted conference call

F: conférence restreinte

S: comunicación conferencia restringida

A *conference call* in which certain nominated *terminals* may only transmit to one, or some, of the terminals involved, or may not transmit at all.

721.53.58

53 broadcast conference call

F: conférence-diffusion

S: comunicación conferencia de difusión

A *restricted conference call* in which only one nominated *terminal* can transmit to and receive from the other terminals.

721.53.59

54 prefix

F: préfixe

S: prefijo

An indicator, consisting of one or more digits, that allows the selection of different types of address formats (e.g. local, national or international address formats), transit network and/or service selection. Prefixes are not part of the national subscriber number and are not signalled over inter-network or international boundaries.

55 escape code

F: code d'échappement

S: código de escape

An indicator consisting of one or more digits. The indicator is defined in a given numbering plan and is used to indicate that the following digits are a number from a different numbering plan. Escape codes are currently used within Recommendation X.121 numbering plans.

Note — An escape code may be carried forward through the originating network and can be carried across inter-network and international boundaries. Therefore, the values of escape codes should be standardized.

Supplement No. 3

OUTLINE DESCRIPTION OF THE INMARSAT STANDARD-C SYSTEM AND THE SERVICES IT MAY SUPPORT

(quoted in Recommendation F.127)

1 Purpose

The purpose of this Supplement is to place the operational procedures specified in the main part of Recommendation F.127 into a broader perspective by giving an outline description of the INMARSAT Standard-C system and the services it may support.

2 Definitions

The following are definitions of the terms used in relation to message transmission in the Maritime Satellite Service using the INMARSAT Standard-C system.

Note — A similar set of definitions for data transmission is contained in Recommendation X.350 and for telephone interworking in Recommendation M.1100.

2.1 **maritime satellite message transmission system** is a means for the establishment of temporary connections between an on-board DTE and a maritime satellite store-and-forward unit. The maritime satellite message transmission system comprises a maritime local circuit, a maritime satellite circuit, a maritime terrestrial circuit, and a maritime store-and-forward unit. The general configuration is shown in Figure 1.

2.2 **maritime local circuit** is a circuit between an on-board DTE and the ship earth station.

2.3 **maritime satellite circuit** is a circuit between the ship earth station and the coast earth station. It comprises all elements required for establishing, maintaining and clearing the maritime satellite circuit including the network coordination station.

2.4 **maritime terrestrial circuit** is a circuit between the coast earth station and the maritime satellite store-and-forward unit. The coast earth station and the maritime satellite store-and-forward unit may be co-located or remote from one another.

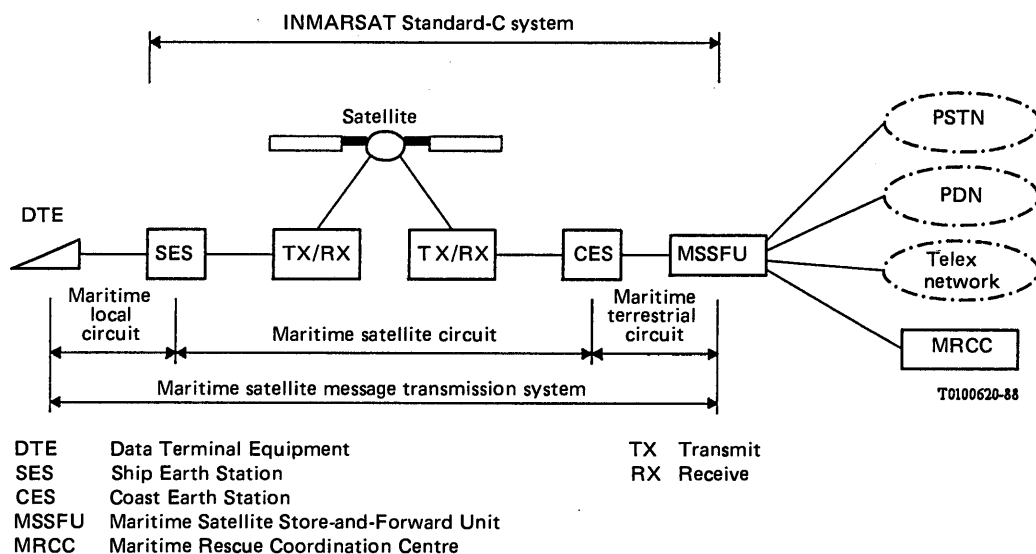


FIGURE 1

Main elements of the maritime-satellite message system

2.5 **ship earth station (SES)** is defined in Article 1, Section 4.16 of the *Radio Regulations*, ITU, Geneva, 1982, but may be viewed as the combination of a data circuit-terminating equipment (DCE) and a radio transceiver.

2.6 **coast earth station (CES)** is defined in Article 1, Section 4.14 of the *Radio Regulations*, ITU, Geneva, 1982.

2.7 **maritime satellite store-and-forward unit (MSSFU)** is the functional interface between the maritime satellite message transmission system and a public network.

The MSSFU provides the following functions:

- interworking between the signalling systems used in the maritime satellite transmission message transmission system and the relevant public network;
- routing and call control for calls to and from ships;
- effects message transfer to and from ships by store-and-forward;
- charging.

2.8 **network coordination station** is a station in the maritime satellite system with the capability to coordinate, supervise and monitor the assignment and utilization of the maritime satellite circuits within a satellite coverage area. The network coordination station is designated by and operated for the satellite system operator (INMARSAT).

3 System overview

3.1 Calls may be made from ship to shore, shore to ship, or ship to ship.

3.2 The characteristics of the maritime satellite circuit provided by the INMARSAT Standard-C system are such that message transfer in real time cannot be supported. Only store-to-store message transfer, which allows for error correction using ARQ techniques, can be supported over the maritime satellite circuit. The possibility of real time working over the maritime satellite circuit, thus allowing by-pass of the store-to-store processes, is for further study.

3.3 The system has been designed so that the message transfer between terminals is performed by three cascaded independent store-and-forward message transfer processes:

- a) DTE to (or from) DCE at the SES over the maritime local circuit;
- b) SES to (or from) the MSSFU over the combined maritime satellite and maritime terrestrial circuits; and
- c) MSSFU to (or from) the terrestrial public network.

- 3.4 The message transfer processes may be arranged to provide two modes of operation:
- a) relay (baton passing), and
 - b) end-to-end (fire-bucket brigade).

3.4.1 *Relay mode of operation*

This is the basic mode of operation of the Standard-C system and is a mandatory provision. As the name implies each message is handed on and then the messenger drops out, i.e. at each transfer the complete message is stored and the circuit released before the next circuit is established over which the message is forwarded. During any one call, message flow is in one direction only, i.e. simplex working.

3.4.2 *End-to-end mode of operation*

This is not a mandatory provision of the Standard-C system. This mode of operation is only available on ship-to-shore calls. In this mode the circuits are left connected to allow part-messages to be passed in both directions from one end to the other. Half duplex working is available to the end users. However, the provision of full duplex working is for further study.

4 **Services**

Only message and data services are provided (speech communication is not provided). All message and data transfers shall take place at the earliest opportunity, unless delayed at the request of the originator.

All transactions handled by a MSSFU are given a reference number and stamped with the date and time at which their processing occurred. As detailed below, for an Administration operating a Standard-C system, the offering of specified services to the subscribers to certain public networks is mandatory, whilst the offering of these same services to the subscribers to all public networks is optional. (The offering of the remaining services to anyone is also optional.)

The services that may be supported by an SES also varies (dependent on SES complexity), and this variation has led to the SES classification shown in Table 1.

TABLE 1
INMARSAT's SES classification in terms of the services supported

Call direction	Services	SES class (Note)		
		1	2	3
Shore-to-ship	Message EGC Polling command	S NS OS	S I OS	S S OS
Ship-to-shore	Message Data reporting Distress alert	S OS S	S OS S	S OS S
Ship-to-ship	Message	S	S	S

Note — The entries in the columns under SES class have the following meanings:

- S Service is supported
- NS Service is not supported
- I (EGC) services are supported when SES is otherwise idle
- OS Service is optionally supported, dependent on SES complexity

4.1 *Shore-to-ship services*

Broadly there are three groups of services:

- a) message,
- b) enhanced group call, and
- c) polling command, which are described in more detail below.

An Administration operating a Standard-C system must offer to the subscribers to the public telex network the message (one or two-stage) service and the enhanced group call (EGC) services. The provision of the other services to the subscribers to the public telex network is optional. The provision of any of these services to the subscribers to other public networks is also optional.

These services may be extended across international borders on a bilateral basis. Where no such bilateral agreement exists, the Administration operating the system may clear the call and return the appropriate service signal.

All shore-to-ship services use only the relay mode of operation.

4.1.1 *Message services*

4.1.1.1 *On-stage message service*

Subscribers to a public network may send single messages to ships.

The subscribers to a public network gain access to the MSSFU by using selection procedures normal to that of the terrestrial network. The called address is the mobile earth station's international number¹⁾. Because it is an essential feature of this service that the called address is automatically passed forward (by the appropriate signalling system) to the MSSFU, the subscriber achieves access to the unit and addresses the ship by a single stage of selection. On receipt of this address, the MSSFU will check that the required ship is logged into the ocean region and will accept or reject the call accordingly.

The MSSFU also needs to know the network address of the calling subscriber so that, if required, advice of non-delivery can be made. This address is forwarded to the MSSFU for a subscriber to the public telex network by the caller's answerback, or for a subscriber to PDN through the network protocols. But a subscriber to the PSTN will have to provide the address by being registered in advance with the Administration offering the service, and by going through a log-on/validation procedure prior to putting in the message. Non-registered PSTN subscribers are barred.

Having entered the whole message the calling subscriber may clear the terrestrial call. Only when the complete message is stored in the MSSFU will it be handed on to the addressed SES.

The return of a positive delivery notification is a national matter. But if the message cannot be delivered, it is mandatory that the message originator be advised of non-delivery. Where possible, the MSSFU will set up a call (across the appropriate terrestrial network) to the originator's network address in order to advise non-delivery. In those cases where this is not possible (e.g. to a PSTN terminal having an originate-only modem), the means of providing non-delivery notification is for further study.

4.1.1.2 *Two-state message service*

In order to be able to use these services the subscribers to public networks must be registered in advance with the Administration operating the system. Non-registered callers are barred.

The subscribers use selection procedures (normal to the terrestrial networks to which they are connected) to access the MSSFU. Any convenient national network address (having no necessary relationship with ships' numbers) may be allocated for access to the MSSFU. On gaining access the terrestrial subscriber enters into dialogue with the unit. Having first logged-on and undergone validation, the caller enters the mobile earth station's international number¹⁾ to be called (i.e. performs the second stage of selection), requests any special service features required (multi-address call, follow-on messages, class of delivery), and enters the message(s).

Again, positive delivery notification is a national matter, but advice of non-delivery is mandatory. (For this service the message originator's network address will always be known.) The non-delivery advice procedures are described above in § 4.1.1.1.

¹⁾ See Recommendation F.125.

4.1.2 *Enhanced group call (EGC) services*

In order to be able to use these services the subscribers to public networks must be registered in advance with the Administration operating the system. Non-registered callers are barred.

This group of services is identified by a unique address format which is described in Annex A.

In general these are message broadcast services, i.e. the message is sent simultaneously to a number of ships, which have to be specially equipped with an EGC receiver capability to be able to receive them.

The messages sent have attributes that must be specified by the message originator, namely: message priority, the service into which the message falls, address of message, the rate at which the message is repeated, and the alphabet into which the message is translated. These attributes are specified in a message header which uses a standardized structure and coding system. A detailed description of message header structure and coding is given in Annex A.

Notification of message delivery or non-delivery is not mandatory.

This group of services is divided between the:

- FLEETNET™ service, and
- SAFETYNET™ service.

4.1.2.1 *FLEETNET™ service*

This service is for commercial users requiring closed user group operation, so-called *group call*, to a pre-defined group of one or more ships. This group is identified by having a common address, i.e. a group number.

Supporting this service is a system housekeeping service, which requires unique receiver addressing. This service is called "Download Group Identity", and is used when group numbers are being added to, or deleted from, the list of group numbers held in a particular EGC receiver to which it will respond. The unique address of an EGC receiver and the group numbers to which it will respond cannot be changed by the ship's operator.

4.1.2.2 *SAFETYNET™ service*

Strictly speaking this is not a public service, but its description is included for the sake of completeness.

This service is for information providers (mostly government agencies) disseminating maritime safety information to all suitably equipped ships in a specified geographical area. These geographical areas may be either:

- a) a fixed, pre-defined area (such as the Navarea, WMO area or NAVTEX coverage area), or
- b) an absolute area (whose boundary is specified by a set of coordinates).

In order to be able to respond to geographical area addressing, the EGC receiver must be programmed with the ship's current position. If the ship's position has not been updated for more than 12 hours, all geographical addressed messages having a priority higher than routine are printed out by the receiver.

The services currently available within SAFETYNET™ (along with their service code in brackets) are (see § A.3.2):

- Navarea warnings (31);
- WMO meteorological forecasts (22) and warnings (42), to ships in any one of 1000 WMO areas;
- WMO meteorological forecasts (34), to ships in an absolute rectangular area;
- NAVTEX re-broadcasts (12);
- distress alert (14), to ships in an absolute circular area;
- meteorological warnings, to ships in an absolute rectangular area (04) or circular area (24);
- maritime safety message to all ships in an ocean region (00).

4.1.3 *Polling command services*

In order to be able to use these services the subscribers to public networks must be registered in advance with the Administration operating the service. Non-registered callers are barred. This group of services is addressed by a means yet to be determined.

These services allow polling command originators to poll a selected group of ships to extract prepared data held on board ship awaiting transmission or to transmit a message to the group. When polled, the stored data in the ship terminal is automatically transmitted to the MSSFU where it is stored in the polling output file allocated when the poll was initiated. The means by which the polling command originator obtains the field data (by retrieval and/or forced delivery) is a national matter.

The three services contained in this group of services may be distinguished as follows:

- i) one or more ships are listed by the polling command originator, but are polled individually,
- ii) the ships in a pre-defined user group are polled simultaneously, and
- iii) the ships in a geographical area specified by the polling command originator are polled simultaneously.

These are described below.

4.1.3.1 *Polling command individually-directed service*

The subscriber issuing the polling command, having obtained access to the MSSFU, lists the one or more ships to be polled and releases the terrestrial connection. Each SES is then polled individually, thereby allowing the provision of the following service features:

- i) notification in the polling output file, if the ship is not present in the ocean region, or the SES is non-operational, and
- ii) retry, if the SES is busy when the polling command is first issued.

4.1.3.2 *Polling command group-directed service*

In this service the polling command is transmitted simultaneously to all ships within the pre-defined closed user group. In this mode of operation, recognition of absent, non-operational, or busy SESs cannot be supported, so the notification and retry features available in the individually-directed service are precluded.

4.1.3.3 *Polling command area-directed service*

Apart from the different choice in the ships addressed, this service is the same as that described in § 4.1.3.2 above.

4.2 *Ship-to-shore services*

In this direction there are four services:

- i) message,
- ii) data reporting,
- iii) database access, and
- iv) distress alert.

They are described in more detail below.

An Administration operating a Standard-C system must provide the message service to shipboard subscribers; however, it is only mandatory for the Administration to forward messages to the subscribers to the public telex network, the forwarding of messages to the subscribers to other public networks being optional. The offering of the data reporting and database access services to shipboard subscribers is optional.

It is mandatory for an Administration operating a Standard-C system to provide the distress alert service and to forward distress alert messages to a MRCC convenient to that Administration.

4.2.1 *Message service*

Shipboard subscribers to the Maritime-Satellite Service provided by the Standard-C system may send single messages to the subscribers to public networks and to appropriate Applications (from the list shown in Table A-1/F.126).

The messages are forwarded by the MSSFU over a terrestrial connection established by this unit to the addressed subscriber or Application.

Upon delivery of the message to the terrestrial destination, a delivery notification is sent to the ship if requested. In the event of non-delivery a non-delivery notification is sent to the ship.

4.2.2 *Data reporting service*

In order to be able to use this service a terrestrial subscriber and a pre-defined group of ships forming a closed user group must be registered in advance with the Administration operating the service. Non-registered callers are barred.

The service provides for the automatic transmission of prepared data from a ship (within the pre-defined group) to the designated MSSFU where it is stored in the addressed reporting output file. These transmissions are initiated on-board ship, (in contrast to the polling services where the transmission of the data is in response to a polling command issued by the terrestrial polling command originator).

How the terrestrial subscriber obtains the data stored in the reporting output file (by retrieval and/or forced delivery) is a national matter.

4.2.3 *Distress alert service*

This service is available to all ships regardless of whether the ship is logged into an ocean region or not.

A distress alert message is forwarded by the MSSFU without delay to a Maritime Rescue Coordination Centre (MRCC), and a distress alert acknowledgement is sent to the ship. If the ship fails to receive the distress alert acknowledgement, a distress alert message retry cycle is automatically initiated by the ship's SES.

4.3 *Ship-to-ship service*

The only service available between ships is a single message service, i.e. shipboard subscribers may send single messages to other shipboard subscribers. The ships involved do not have to be located in the same ocean region.

For those calls that are routed through a public network, this service shall have the same service features (and shall use the same procedures) as for the ship-to-shore message service.

ANNEX A

(to Supplement No. 3)

Description of the structure and coding to be used in the message headers of enhanced group calls

A.1 *Introduction*

The INMARSAT Standard-C system requires that messages sent in the enhanced group call services are preceded by information about the message in order that they may be received by the appropriate group of ships, in the appropriate area. This information contains five attributes, namely: message priority, the service into which the message falls, address of message, the rate at which the message is repeated, and the alphabet into which the message is translated.

In order that the same procedures are used by all message originators, these message descriptions are coded and contained in a message header of defined structure. This Annex details this standardized structure and coding.

A.2 General structure of message header

The message header contains five codes, one for each attribute. These codes, known as C codes, are presented by the message originators in the following sequence:

$C_1 C_2 C_3 C_4 C_5$

where

- C_1 is the priority code — 1 digit
- C_2 is the service code — 2 digits
- C_3 is the address code — up to 11 digits
- C_4 is the repetition code — 2 digits
- C_5 is the presentation code — 2 digits.

A digit in this context means an alphanumeric character.

The definition of the C codes is given in the next section, but for illustration purposes an example message header is given below:

1 22 12 22 05

This example header is for a safety priority ($C_1 = 1$) message containing a WMO type meteorological forecast ($C_2 = 22$) to Region 12 ($C_3 = 12$) which will be repeated 2 hours ($C_4 = 22$) after the initial transmission. The text is transmitted in this case in International Alphabet 5 ($C_5 = 05$).

A.3 Definition of codes

A.3.1 Priority codes, C_1 (1 digit)

The C_1 code is used to indicate the level of priority needed for the message transmission. In ascending order the priority codes are defined as follows:

- 0 Routine
- 1 Safety
- 2 Urgent
- 3 Distress.

A.3.2 Service codes, C_2 (2 digits)

These codes have been allocated to service as listed below:

- 00 All ships call
- 03 Group call
- 04 Meteorological warnings to rectangular areas
- 11 INMARSAT system message
- 12 NAVTEX re-broadcast
- 14 Shore-to-ship distress alert
- 22 WMO meteorological forecasts
- 23 EGC system message
- 24 Meteorological warnings to circular areas
- 31 Navarea warnings
- 33 Download group identity
- 34 WMO meteorological forecast (rectangular)
- 42 WMO meteorological warnings.

A.3.3 Structure of address codes, C_3 (up to 11 digits)

Each service listed in § A.3.2 above has a number of possible addresses associated with it. These addresses are coded as specified below:

A.3.3.1 All ships call ($C_2 = 00$)

For this case an address as such is not needed, but in order to preserve the structure an arbitrary code $C_3 = 00$ has been assigned.

A.3.3.2 Group call ($C_2 = 03$)

The EGC receivers forming a closed user group are identified by a common address code. The C_3 address codes are 7-digit numbers allocated by INMARSAT.

A.3.3.3 Meteorological warnings to rectangular areas ($C_2 = 04$)

The address code defines the location and size of a rectangular area within an ocean region. The 11 digits of the C_3 code are coded to perform this definition as follows:

- $D_1D_2D_3$ (3 characters) where $D_3 = N$ or S – specifies the latitude of the southwest corner of the rectangle in degrees and whether north (N) or south (S) of the equator;
- $D_4D_5D_6D_7$ (4 characters) where $D_7 = E$ or W – specifies the longitude of the southwest corner of the rectangle in degrees and whether east (E) or west (W) of the prime meridian (if the longitude is less than 100° then the notation 085 for example should be used);
- D_8D_9 (2 characters) – extent in degrees of the rectangle in latitude (northings);
- $D_{10}D_{11}$ (2 characters) – extent in degrees of the rectangle in longitude (eastings).

For example:

12S124E1010

defines a rectangle whose southwest corner is 12 S and 124 E. The extent of the rectangle is 10° north and 10° east.

A.3.3.4 INMARSAT system message ($C_2 = 11$)

The message repertoire and its coding is for further study.

A.3.3.5 NAVTEX re-broadcasts ($C_2 = 12$)

The 2 digits of the C_3 code have the general structure B_1B_2 , where B_1 identifies the NAVTEX transmitter coverage area and is followed by B_2 , the message type. The codes allocated to B_2 are listed below:

- | | |
|---|----------------------------------|
| A | Navigational warnings |
| B | Meteorological warnings |
| C | Ice reports |
| D | Search and rescue information |
| E | Meteorological forecast |
| F | Pilot service messages |
| G | DECCA messages |
| H | LORAN messages |
| I | OMEGA messages |
| J | SATNAV messages |
| K | Other electronic navaid messages |
| L | Additional navigational warnings |
| Z | QRU (no messages in hand). |

A.3.3.6 Shore-to-ship distress alert ($C_2 = 14$)

The address code defines the location and size of a circular area within an ocean region. The 10 digits of the C_3 are coded to perform this definition as follows:

- $N_1N_2N_3$ (3 characters) where $N_3 = N$ or S – specifies the latitude of the centre of the circle in degrees and whether north (N) or south (S) of the equator;
- $N_4N_5N_6N_7$ (4 characters) where $N_7 = E$ or W – specifies the longitude of the centre of the circle in degrees and whether east (E) or west (W) of the prime meridian (the notation 085 should be used for longitude less than 100°);

- $N_8N_9N_{10}$ (3 characters) – specifies the radius of the circle in nautical miles, up to 999 nautical miles.

For example:

56N034W010

defines a circle with centre at 56 N 034 W, and a radius of 10 nautical miles.

A.3.3.7 *WMO meteorological forecasts* ($C_2 = 22$)

Globally up to 1000 areas may be pre-coded, C_3 having 3 digits.

A.3.3.8 *EGC system messages* ($C_2 = 23$)

The message repertoire and its coding in 7-digit numbers is for further study.

A.3.3.9 *Meteorological warnings to circular areas* ($C_2 = 24$)

The coding of the location and size of the circular area is as described in § A.3.3.6 above.

A.3.3.10 *NAVAREA warnings* ($C_2 = 31$)

Up to 100 areas within an ocean region can be pre-coded, C_3 having 2 digits.

A.3.3.11 *Download group identity* ($C_2 = 33$)

Each EGC receiver is allocated a unique number in a numbering range managed by INMARSAT. The numbers have 7 digits and form the C_3 address code which is used when group numbers are being added to, or deleted from, the list of group numbers held in a particular EGC receiver.

A.3.3.12 *WMO meteorological forecasts (rectangular)* ($C_2 = 34$)

The condition of the location and size of the rectangular area is as described in § A.3.3.3 above.

A.3.3.13 *WMO meteorological warnings* ($C_2 = 42$)

Globally up to 1000 areas may be pre-coded, C_3 having 3 digits. These area codes are the same as those allocated for WMO meteorological forecasts.

A.3.4 *Repetition codes* C_4 (2 digits)

The repetition rate is the number of times the message originator requires the message to be transmitted and the interval between retransmissions. The presently allocated repetition rates are coded as follows:

- | | |
|----|--|
| 10 | transmit once on receipt |
| 21 | transmit 1 hour after initial broadcast (twice) |
| 22 | transmit 2 hours after initial broadcast (twice) |
| 23 | transmit 3 hours after initial broadcast (twice) |
| 24 | transmit 4 hours after initial broadcast (twice) |
| 26 | transmit 12 hours after initial broadcast (twice) |
| 27 | transmit 24 hours after initial broadcast (twice) |
| 30 | transmit 12 hours after initial broadcast, then 12 hours after the second broadcast (three times) |
| 31 | transmit 24 hours after initial broadcast, then 24 hours after the second broadcast (three times) |
| 40 | transmit 12 hours after initial broadcast, then 12 hours after the second broadcast and 12 hours after the third broadcast (four times) |
| 41 | transmit 24 hours after initial broadcast, then 24 hours after the second broadcast and 24 hours after the third broadcast (four times). |

A.3.5 *Presentation codes C₅ (2 digits)*

This fifth attributes has been introduced in order to facilitate the possible introduction of alphabets other than IA5 into which the message part of an EGC may be translated for sending over the maritime satellite message transmission system. IA5 and some example alphabets are coded as follows:

- | | |
|----|--|
| 05 | IA5 (international reference version) odd parity |
| 06 | Katakana odd parity |
| 07 | Devanagari odd parity |
| 08 | Arabic odd parity |
| 09 | Cyrillic odd parity |

A.3.6 The structure and coding of message headers for other services, e.g. polling command services, will be included at a later date.

