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 t´elex d’Etat

S: comunicaciones t´elex 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 t´elex internationale

S: posici´on t´elex 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: relaci´on (t´elex)

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 exchange ;

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;

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.

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.

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 arrange 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:

H.T. [T1.60]

Place Subscriber's exchange (where necessary) }	Subscriber's name and address Call number	{ Answer-back code		

TABLE [T1.60] p.

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:

H.T. [T2.60]

{ Subscriber's name and address, including the locality } Subscriber's exchange (where necessary) }	{ Call number	Answer-back code	

TABLE [T2.60] p.

3.7.1.3.2 The list of answerback codes shall be compiled in numerical order.

Example:

H.T. [T3.60]

Answer-back code Subscriber's exchange (where necessary) } Call number (where necessary) }	Subscriber's name and place {	{	

TABLE [T3.60] p.

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 answer-back 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:

To be repeated until the transmission is brought to a stop.

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

CI Conversation impossible

COL Collation please/I collate

CRV Do you receive well?/I receive well

DER Out of order (see Table 1/F.60)

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

T Stop your transmission

(or figure 5)

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

H.T. [T4.60]

TABLE 1/F.60

Expanded form of DER code expression

Code expression Additional information characters | a), b) }	{ Meaning	
Out of order due to no text recording medium }	**EXM**	{
DER Out of order due to failure of answerback mechanism }	**NAB**	{
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.	**PFL**	{

Note 1 — The implementation of these expanded forms of the service signal is a national matter.

Note 2 — See also Recommendation U.45.

Table 1/F.60 [T4.60], p.

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* : **1-3B/F4**

A.3.2 In order to avoid misunderstanding, a whole number, a fractional number, or a fraction followed by a % or o/oo should be transmitted by joining them up to the % or o/oo sign by a dash, or transmitted in full as appropriate.

Examples: for *2%* transmit **2-0B/F0** or **2 PER CENT**

Examples: for *4½o / o ρ*transmit **4-1B/F2-0B/F00** or **4-1B/F2 PER MILLE** .bp

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)**

Examples: **1500 REPEAT 1500**

Examples: **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 **XXXXX** (letter **X** repeated five times and followed by a space) 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;

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.

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.

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.

H.T. [T5.60]
TABLE A-1/F.60
Procedure after ineffective call attemps
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.

Table A-1/F.60 [T5.60], p.

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.

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Recommendation F.61

OPERATIONAL PROVISIONS RELATING TO THE CHARGEABLE DURATION OF A TELEX CALL

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 ± | % 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;

See also Recommendation D.61.

— 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** .bp

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.

H.T. [T1.63]

TABLE 1/F.63

Additional facilities in the international telex service

| ua)

Facility Definition reference | ub)	{ Relevant Recommendations	
Calling facilities		
Automatic calling	1.1	S.16, S.19
{ *Subscriber call information* }		
{ Line identification by the network }	2.2	
{ *Facilities offered in the case of unsuccessful attempts, delayed or redirected calls* }		
Call redirection	3.5	
{ Changed address interception }	3.6	U.41
{ *Access to other networks or special services* }		
{ Interworking between networks | uc) }	4.1	F.71
Private network	4.2	
Store-and-forward	4.10	F.72
Delayed delivery	4.12, 4.13	
{ *Categories of special or privileged users* }		
Access barred	5.4	
Public booths	5.13	
{ *Facilities for setting up multi-address calls* }		
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 furher 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.

TABLE 1/F.63 [T1.63], p.

References

[1] CCITT — Question 21/IX, Annex 2, Contribution COM IX-No. 1, Study Period 1981-1984, Geneva, 1981.

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Recommendation F.64

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 undirectional 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.

Blanc

H.T. [T1.64]

TABLE 1/F.64

Traffic capacity table for manually selected telex circuits

(Note 1)

Number of circuits	{		
	1 in 10 (Note 2)	1 in 30 (Note 3)	1 in 50 (Note 3)
a	*b*	*c*	*d*
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* .

Tableau 1/F.64 [T1.64], p. 7

Figure 1/F.64 p. 8

H.T. [1T2.64]
MONTAGE: Reprendre originaux du Livre Rouge
Pas de nouvelle saisie = Maintenu Livre Rouge
H.T. [2T2.64]
MONTAGE: Reprendre originaux du Livre Rouge
Pas de nouvelle saisie = Maintenu Livre Rouge
H.T. [3T2.64]
MONTAGE: Reprendre originaux du Livre Rouge
Pas de nouvelle saisie = Maintenu Livre Rouge
H.T. [1T1.69]

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.

Tableau 2/F.64 [1T2.64], p. 9

H.T. [2T2.64]

MONTAGE: Reprendre originaux du Livre Rouge

Pas de nouvelle saisie = Maintenu Livre Rouge

H.T. [3T2.64]

MONTAGE: Reprendre originaux du Livre Rouge

Pas de nouvelle saisie = Maintenu Livre Rouge

H.T. [1T1.69]

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.

Tableau 2/F64 [2T2.64], p. 10

H.T. [3T2.64]
MONTAGE: Reprendre originaux du Livre Rouge
Pas de nouvelle saisie = Maintenu Livre Rouge
H.T. [1T1.69]

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.

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Note 2 — (xx): This TNIC is not yet listed in the official TNIC List.

Tableau A-1/F.69 [1T1.69], p. 16

H.T. [2T1.69]

lw(30p) | lw(84p) .

Tableau A-1/F.69 [2T1.69], p. 17

H.T. [3T1.69]

lw(30p) | lw(84p) . lw(30p) | lw(84p) .

{ 925 926 927 928 929 930 931 932 933 934 935 936 937 938 DG Diego Garcia Island 939 AV Ascension 94 GH Ghana 95 SA South Africa (Republic of) | uh) 960 HL Saint Helena 961 RE Reunion (French Department of) 962 BD Botswana (Republic of) 963 LO Lesotho (Kingdom of) 964 WD Swaziland (Kingdom of) 965 SZ Seychelles (Republic of) 966 IW Mauritius 967 ST Sao Tome and Principe (Democratic Republic of) 968 969 BI Guinea Bissau (Republic of) 970 KN Cameroon (Republic of) 971 RC Central African Republic 972 BC Benin (People's Republic of) 973 GO Gabonese Republic 974 MQ Mauritania (Islamic Republic of) 975 NI Niger (Republic of the) 976 KD Chad (Republic of) 977 TO Togolese Republic 978 UV Burkina Faso 979 DJ Djibouti (Republic of) 980 ET Ethiopia 981 KG Congo (People's Republic of the) 982 ZR Zaire (Republic of) 983 CI C | te d'Ivoire (Republic of the) 984 SD Sudan (Democratic Republic of the) 985 MJ Mali (Republic of) 986 MG Madagascar (Democratic Republic of) 987 KE Kenya (Republic of) 988 UG Uganda (Republic of) 989 TZ Tanzania (United Republic of) (mainland) 990 TA Zanzibar (Tanzania) 991 AN Angola (People's Republic of) 992 MO Mozambique (People's Republic of) 993 CV Cape Verde (Republic of) 994 KO Comoros (Islamic Federal Republic of the) 995 GE Guinea (Republic of) 996 GV Gambia (Republic of the) 997 LI Liberia (Republic of) 998 SE Sierra Leone 999 EG Equatorial Guinea (Republic of)

} _

Tableau A-1/F.69 [3T1.69], p. 18

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

AACRAll America Cables and Radio, Inc.

EMIRTEL
The Emirates Telecommunication Corporation Ltd.

ENTELEmpresa Nacional de Telecomunicaciones

GTC Government Telecommunications Centre (Malta)

INTELInstituto Nacional de Telecomunicaciones

RCA RCA Global Communications, Inc.

RCACRadio 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 Western Union International Caribbean, Inc.

H.T. [T1.70]

TABLE 1/F.70
{
International telex service observations
}

ADMINISTRATION: TRAFFIC OUTGOING FROM: PERIOD OF OBSERVATION: ROUTE BUSY HOUR:	 UTC UTC	 TO TO TO	 UTC UTC
{ International side (Includes retries) }	National side	International side	

	Average this destination	Average all destinations	Average this destination	Average all destinations	

		Call setup time (min. sec.)	Chargeable time (min. sec.) Call setup time (min. sec.)		
		DER Signal received	OCC Signal received	NA Signal received { No call connect (time out)	
	{	Lack of outgoing circuits			

Tableau A-1/F.69 [4T1.69], p. 19

Recommendation F.70

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.

H.T. [T1.70]

TABLE 1/F.70

{

International telex service observations

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ADMINISTRATION: TRAFFIC OUTGOING FROM: PERIOD OF OBSERVATION: ROUTE BUSY HOUR:	 UTC UTC	 TO TO TO	 UTC UTC		
{ International side (Includes retries) }	National side	International side			
	Average this destination	Average all destinations	Average this destination	Average all destinations	
		Call setup time (min. sec.)	Chargeable time (min. sec.)		
			Call setup time (min. sec.)		
		DER Signal received	OCC Signal received	NA Signal received { No call connect (time out)	
	{	Lack of outgoing circuits			

Tableau 1/F.70 [T1.70], p. 20

Recommendation F.71

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 < ≡↓**GA** (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.

Blanc