



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 TELEPHONE CONSULTATIVE COMMITTEE
(C. C. I. F.)

XVIIth PLENARY ASSEMBLY

GENEVA, 4-12 OCTOBER 1954

VOLUME VI

Operating and Tariffs

Part 1 — C.C.I.F. recommendations concerning international telephone operating and tariffs (Geneva, 1954)

Part 2 — Miscellaneous documentation.

INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE
(C. C. I. F.)

XVIIth PLENARY ASSEMBLY

GENEVA, 4-12 OCTOBER 1954

VOLUME VI

Operating and Tariffs

Part 1 — C.C.I.F. recommendations concerning international telephone operating and tariffs (Geneva, 1954)

Part 2 — Miscellaneous documentation.



CONTENTS
OF VOLUME VI OF THE C.C.I.F. GREEN BOOK

PART ONE

*C.C.I.F. Recommendations concerning international telephone
operating and tariffs (Geneva, 1954)*

	Page
List of C.C.I.F. Recommendations concerning international telephone operating and tariffs	3
A. General	9
B. Various classes of calls and facilities available to the public	41
C. Operating methods	68
D. Charges and methods of application of charges	88
E. Traffic statistics and documentation	121

PART TWO

Miscellaneous documentation

1. Arrangements (made in the internal services of each country) to advise the caller that the telephone number of the called station has been changed, either temporarily or permanently	143
2. Telephone information service	150

PART ONE

C. C. I. F. RECOMMENDATIONS CONCERNING INTERNATIONAL TELEPHONE OPERATING AND TARIFFS

(GENEVA, 1954)

List of C.C.I.F. Recommendations concerning international telephone operating and tariffs

A. General

- Recommendation No. 1 — Definition of terms used in international telephone operation.
- Recommendation No. 2 — Decentralisation of international traffic.
- Recommendation No. 3 — Maximum delay for ordinary international calls established with advance preparation.
- Recommendation No. 4 — Operation of the intercontinental telephone services.
- Recommendation No. 5 — Preparation of an atlas of international circuits in European cables.
- Recommendation No. 6 — Extension of international telephone services.
- Recommendation No. 7 — Arrangements to be made for regulating the telephone service between two countries.
- Recommendation No. 8 — Opening of new services — Publicity calls.
- Recommendation No. 9 — Form to be used for indicating to telephone exchanges the normal and auxiliary routes.
- Recommendation No. 10 — Use of auxiliary routes in the rapid international telephone service.
- Recommendation No. 11 — Emergency routes.
- Recommendation No. 12 — Directories.
- Recommendation No. 12 *bis* — Use of speech recording apparatus associated with subscribers' telephones.
- Recommendation No. 12 *ter* — International list of telephone exchanges.
- Recommendation No. 13 — Publication of booklets showing authorised international telephone services, the facilities allowed and the corresponding charges.

B. Various classes of calls and facilities available to the public

- Recommendation No. 14 — Subscription calls.
- Recommendation No. 15 — Occasional fixed time calls.
- Recommendation No. 16 — Deferred telephone calls.
- Recommendation No. 17 — Avis d'appel and préavis calls.
- Recommendation No. 17 *bis* — Avis d'appel calls in frontier relations.
- Recommendation No. 18 — Stock Exchange calls.
- Recommendation No. 19 — Collect calls.
- Recommendation No. 20 — Requests for information.
- Recommendation No. 20 *bis* — Epidemiological calls.

- Recommendation No. 21 — Lease of international communication channels for private service.
Recommendation No. 21*bis* — Simultaneous use of leased telephone circuits for telegraphy and telephony.
Recommendation No. 22 — Conference calls.
Recommendation No. 23 — Utilisation by public services of international telephone connexions which are their property.
Recommendation No. 24 — Modifications of bookings at the request of the caller.
Recommendation No. 25 — Transmission of bookings under the advance preparation method of operating.

C. Operating methods

- Recommendation No. 26 — Operation of international circuits.
Recommendation No. 26*bis* — Numbering plan for the international semi-automatic telephone service.
Recommendation No. 26*ter* — Code for access to the international network.
Recommendation No. 27 — Assignment of a serial number to each booking of a call in advance preparation operating.
Recommendation No. 28 — Enunciation of subscribers' numbers.
Recommendation No. 29 — Directives for the equalisation of delay in both directions in the case of advance preparation operating.
Recommendation No. 30 — Division of circuits into outgoing, incoming and bothway groups.
Recommendation No. 31 — Telegraphic preparation of telephone calls.
Recommendation No. 32 — Transmission difficulties.
Recommendation No. 33 — Advice given to the (outgoing) international terminal exchange that the subscribers have answered.
Recommendation No. 34 — International transit traffic with advance preparation operating.
Recommendation No. 35 — Conditions to be fulfilled from the operating point of view by systems of interconnecting four-wire and two-wire international circuits.
Recommendation No. 36 — System of naming the letters of words and phrases to be employed in the operation of international circuits.
Recommendation No. 37 — Calls to a subscriber's station which has been temporarily connected with the "absent subscribers' service".
Recommendation No. 38 — Comparison of the number of minutes of conversation exchanged between international terminal exchanges.
Recommendation No. 39 — Instruction of telephone exchange staff.
Recommendation No. 40 — Difficulties arising from differences of language in the rapid international telephone service.
Recommendation No. 40*bis* — Time to answer of operators.

D. Charges and methods of application of charges

- Recommendation No. 41 — International telephone charges.
Recommendation No. 42 — Diminishing tariff.
Recommendation No. 43 — Calls to a private branch exchange.
Recommendation No. 44 — Charging for conference calls.
Recommendation No. 45 — Charges for subscription calls.
Recommendation No. 46 — Charge for calls from or to a public call office.
Recommendation No. 47 — Charges for press calls.
Recommendation No. 48 — Minimum traffic to be guaranteed to transit countries.
Recommendation No. 49 — Broadcast transmissions.
Recommendation No. 50 — International calls using radiotelephone circuits.
Recommendation No. 51 — Picture transmissions between subscribers by means of general service circuits: conditions of acceptance and charging.
Recommendation No. 52 — No reply from the calling or called subscriber.

- Recommendation No. 53 — (Cancelled).
- Recommendation No. 54 — Standardisation of the hours of light traffic for the purpose of application of charges.
- Recommendation No. 55 — Allowances and equipment for timing the duration of calls.
- Recommendation No. 56 — Recording the chargeable duration of calls.
- Recommendation No. 57 — Defaulting subscribers.
- Recommendation No. 58 — Publicity expenses.
- Recommendation No. 59 — Checking of monthly telephone accounts.

E. Traffic statistics and documentation

- Recommendation No. 60 — European international telephone traffic statistics.
- Recommendation No. 61 — Publication of the General Telephone Statistics by the General Secretariat of the International Telecommunication Union.
- Recommendation No. 62 — Observations on the international telephone service.
- Recommendation No. 62 *bis* — Statistics of circuit out-of-service times.
- Recommendation No. 63 — Determination of the number of circuits necessary to carry a given traffic in manual operation.
- Recommendation No. 63 *bis* — Determination of the number of circuits necessary to carry a given traffic in semi-automatic operation.
- Recommendation No. 64 — Classification of documents concerning telephony.
- Recommendation No. 65 — General Switching Plan.

A. GENERAL

RECOMMENDATION No. 1

Definition of terms used in international telephone operation *

(Yellow Book, volume I, XIVth P.A., Montreux 1946, p. 59;
Yellow Book, volume I bis, XVth P.A., Paris 1949, p. 81 and
Yellow Book, volume I ter, XVIth P.A., Florence 1951 p. 109)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to define precisely certain essential particulars concerning the methods of measuring the volume of traffic, the speed of service, circuit utilisation and general operational results, including quality of service results intended for use between Administrations and private operating Agencies,

Unanimously issues the recommendation :

That the following definitions reproducing, clarifying or completing those contained in Article No. 2 of the RTf** should be used in the international telephone service.

1. *Booking*. — In the international manual or semi-automatic service, a booking of a call is the first request made by the caller for an international telephone call. In the eventuality of an international automatic service, the operation of the dial on the caller's telephone in order to establish the call with his correspondent automatically, could be likened to a booking of a call. A request for information concerning delay, charges etc., for a call, or a request made with a view to a fresh attempt being made to establish a call, is not regarded as a "booking".

Corresponding terms :

In France : demande de communication ;

In Germany : Gesprächsanmeldung ;

In Spanish-speaking countries : llamada ;

* During the C.C.I.F. XVIth Plenary Assembly and on the proposition of the Telephone Vocabulary Committee, a "Draft List of Definitions of Essential Telephone Terms" was drawn up ; certain definitions appearing in this "Draft List" differ from the corresponding definitions in the present Recommendation No. 1.

** The abbreviation "RTf" indicates the Telephone Regulations of Paris, 1949. The abbreviation "art." signifies "article". The abbreviation "Convention" indicates Convention of Buenos Ayres, 1952.

In the United States of America : call ;
In Italy : richiesta di conversazione ;
In Sweden : samtalsbeställning ;
In the U. S. S. R. : заказ на разговор.

2. *Effective Call.* — The effect given to the booking of a call when communication has been established between the calling station and the called station.

Corresponding terms :

In France : conversation ;
In Germany : Gespräch ;
In Spanish-speaking countries : conversación ;
In the United States of America : effective call ;
In Italy : conversazione ;
In Sweden : samtal ;
In the U. S. S. R. : разговор.

3. *Percentage of effective to booked calls.* — Is the percentage value of the ratio of the total number of effective calls to the total number of bookings.

Corresponding terms :

In France : pourcentage des demandes satisfaites ;
In Germany : Vomhundertsatz der ausgeführten Anmeldungen ;
In Spanish-speaking countries : porcentaje de llamadas completadas ;
In the United States of America : percent completion ;
In Italy : percentuale delle richieste soddisfatte ;
In Sweden : procent beställningar, som lett till samtal ;
In the U. S. S. R. : $\%$ состоявшихся разговоров.

4. *Traffic per average working day.* — The “ traffic per average working day ” is the average of the daily traffic disposed of during working days for a specified period. This average is obtained by dividing the total traffic carried during the working days in the period considered, by the number of such days ; Sundays, holidays, half-holidays, days preceding or following holidays, and days when the traffic is abnormal for any reason are not taken into account.

Corresponding terms :

In France : trafic moyen d'un jour ouvrable ;
In Germany : durchschnittlicher Verkehr eines Werktages ;
In Spanish-speaking countries : tráfico medio por día laborable ;
In the United States of America : traffic per average business day ;
In Italy : traffico medio di un giorno lavorativo ;
In Sweden : genomsnittstrafik per söckendag ;
In the U. S. S. R. : средний обмен за рабочий день.

5. *Exchange busy hour.* — It is the period of sixty consecutive minutes during which the largest number of calls of all categories is set up in the telephone exchange concerned (bookings, outgoing calls, incoming calls and transit calls, etc...) (see the explanatory note below under 23).

Corresponding terms :

In France : heure chargée pour un central téléphonique ;
In Germany : Hauptverkehrsstunde des Amtes ;
In Spanish-speaking countries : hora activa de un centro ;
In the United States of America : office busy hour ;
In Italy : ora di massimo traffico di un ufficio telefonico ;
In Sweden : bråd timme på en station ;
In the U. S. S. R. : час наибольшей нагрузки.

6. *Circuit or circuit group busy hour.* — It is the period of sixty consecutive minutes during which, on the circuit or group of circuits, the largest number of calls in the two directions is set up (see explanatory note below under 23).

Corresponding terms :

In France : heure chargée pour un circuit ou un groupe de circuits ;
In Germany : Hauptverkehrsstunde für eine Leitung oder Leitungsgruppe ;
In Spanish-speaking countries : hora activa de un circuito o grupo ;
In the United States of America : circuit or circuit group busy hour ;
In Italy : ora di massimo traffico di un circuito o di un gruppo di circuiti ;
In Sweden : bråd timme på en ledning eller grupp av ledningar ;
In the U. S. S. R. : час наибольшей нагрузки цепи или группы цепей.

7. *Telephone circuit.* — A telephone circuit is an electrical connexion permitting the establishment of a telephone communication in both directions between two telephone exchanges. A telephone circuit is a "trunk telephone circuit" when it connects two exchanges situated in two different towns in the same country. A telephone circuit is an "international telephone circuit" when it connects two exchanges in two different countries ; in this case, the two exchanges directly connected by the international circuit are called "international terminal exchanges".

Corresponding terms :

In France : circuit téléphonique ;
In Germany : Fernsprechleitung ;
In Spanish-speaking countries : circuito telefónico ;
In the United States of America : telephone circuit ;
In Italy : circuito telefonico ;
In Sweden : telefonledning ;
In the U. S. S. R. : телефонная линия (цепь).

Note. — Sometimes, from the point of view of physical constitution, a distinction is drawn between ordinary telephone circuits, on the one hand, which are entirely metallic circuits : physical or phantom circuits, 2 or 4-wire circuits, circuits obtained by means of carrier currents ; and, on the other hand, radio-telephone circuits, which are not entirely metallic circuits as they use radio links.

8. *Direct call.* — In the international service, a “ direct call ” is a telephone call established by means of a single international telephone circuit.

Corresponding terms :

In France : communication directe ;
In Germany : unmittelbare Verbindung ;
In Spanish-speaking countries : comunicación directa ;
In the United States of America : direct international circuit connection ;
In Italy : comunicazione diretta ;
In Sweden : direktexpedierat samtal ;
In the U. S. S. R. : прямая связь.

9. *Indirect call.* — In the international service, an “ indirect call ” is a telephone call established by means of more than one international telephone circuit.

Corresponding terms :

In France : communication de transit ;
In Germany : Durchgangsverbindung ;
In Spanish-speaking countries : comunicación de tránsito ;
In the United States of America : built-up international circuit connection ;
In Italy : comunicazione di transito ;
In Sweden : transitsamtal ;
In the U. S. S. R. : международная транзитная связь.

A call established by means of two international circuits is called a “ single switch call ”.

Corresponding terms :

In France : communication de transit simple ;
In Germany : Durchgangsverbindung über zwei zwischenstaatliche Leitungen ;
In Spanish-speaking countries : comunicación de tránsito con una conexión ;
In the United States of America : one international switch connection ;
In Italy : comunicazione di transito semplice ;
In Sweden : samtal över en transistation ;
In the U. S. S. R. : международная связь с одним транзитом.

A call established by means of three international circuits is called a “ double switch call ”.

Corresponding terms :

- In France : communication de transit double ;
- In Germany : Durchgangsverbindung über drei zwischenstaatliche Leitungen ;
- In Spanish-speaking countries : comunicación de tránsito con dos conexiones ;
- In the United States of America : two international switch connection ;
- In Italy : comunicazione di transit doppia ;
- In Sweden : samtal över två transitstationer ;
- In the U. S. S. R. : международная связь с двойным транзитом.

10. *Delay on international circuit or group of international circuits.* — In the case of manual operating, it is the delay between the time when the operator at the outgoing international terminal exchange has completed the details of the call booking and the time when the call is established (or could have been established) on the international circuit or group of international circuits concerned.

In the case of semi-automatic working, it is the delay from the moment when the controlling operator has completed the details of the call booking, up to the moment when an international circuit or circuits has been seized for the connexion and all the necessary operations (dialling or key-sending) for the set-up of the connexion in the country of destination have been completed.

In the case of automatic operation, the interval of time in question should be from the moment when the subscriber has dialled (or keyed) the code of the country of destination until the moment when connexion has been established with an equipment (in the country of destination) able to receive the called subscriber's number.

Corresponding terms :

- In France : délai d'attente sur un circuit international ou sur un groupe de circuits internationaux ;
- In Germany : Wartezeit in einer zwischenstaatlichen Fernleitung oder in einer Gruppe solcher Leitungen ;
- In Spanish-speaking countries : demora internacional ;
- In the United States of America : international component of speed-of-service interval ;
- In Italy : tempo d'attesa su un circuito internazionale o su un gruppo di circuiti internazionali ;
- In Sweden : väntetid på en internationell ledning eller grupp av ledningar ;
- In the U. S. S. R. : время ожидания на международной цепи или на группе международных цепей.

11. *Total delay on an international call.* — In the case of manual operating it is the interval between the moment when the caller has completed the particulars of his booking on an international call and the moment when the connexion is established with the station or the person required ; or in the case of a " *préavis call* ", if the called person cannot be obtained, the moment when the caller is informed that the called person is not available.

In the case of semi-automatic or automatic operation, this interval of time should be counted up to the moment when the outgoing operator (or the calling subscriber) receives a tone or a supervisory signal indicating that the called subscriber is free or engaged.

Corresponding terms :

- In France : délai total d'attente pour une communication internationale ;
- In Germany : Gesamtwartezeit in einer zwischenstaatlichen Verbindung ;
- In Spanish-speaking countries : demora total en una comunicación internacional ;
- In the United States of America : overall speed of service interval for international call ;
- In Italy : tempo totale di attesa di una comunicazione internazionale ;
- In Sweden : total väntetid för ett internationellt samtal ;
- In the U. S. S. R. : общее время ожидания международного соединения

12. *Average delay on an international circuit or group of circuits.* — It is the average value of delay observed or calculated during the busiest hours on the international circuit or group of circuits concerned.

Corresponding terms :

- In France : délai moyen d'attente sur un circuit international ou sur un groupe de circuits internationaux.
- In Germany : mittlere Wartezeit in einer zwischenstaatlichen Leitung oder in einer Gruppe zwischenstaatlicher Leitungen ;
- In Spanish-speaking countries : demora media en un circuito o grupo de circuitos internacionales ;
- In the United States of America : average international component of the speed of service interval (on an international circuit or group of circuits) ;
- In Italy : tempo medio d'attesa su un circuito internazionale o su un gruppo di circuiti internazionali ;
- In Sweden : medelväntetid på en internationell ledning eller grup av ledningar ;
- In the U. S. S. R. : среднее время ожидания на международной цепи или на группе международных цепей.

13. *Speed of answer on an international circuit.* — It is the interval of time between the moment when the operator at the international terminal exchange has first called on the international circuit and the moment when the distant end answers.

Corresponding terms :

- In France : délai de réponse sur un circuit international ;
- In Germany : Zeit bis zu Beantwortung des Rufs in einer zwischenstaatlichen Leitung ;
- In Spanish-speaking countries : demora en contestar ;
- In the United States of America : speed of answer ;

In Italy : tempo nella risposta su di un circuito internazionale ;
In Sweden : svarstid på en internationell ledning ;
In the U. S. S. R. : время ожидания ответа на международной цепи.

14. *Overall duration of a call.* — In the case of manual operating, it is the interval of time between the moment when the connexion is established between the calling and called stations and the moment when the calling station gives the clearing signal (or the moment when the connexion is officially broken down by the operator).

In the case of semi-automatic or automatic working, this duration should be equivalent to the “chargeable duration”, that is to say, to the interval of time between the moment when connexion is established and conversation can commence between the calling and called stations, and the moment when the calling station gives the clearing signal (or the moment when the connexion is officially broken down by the operator).

Note. — Between the “overall duration” during which the connexion is established with the called line and the “duration of the call”, there is a difference which is equal to the “ringing time”.

Corresponding terms :

In France : durée totale de la conversation.
In Germany : Gesprächsdauer ;
In Spanish-speaking countries : duración de la conversación ;
In the United States of America : length of conversation ;
In Italy : durata totale della conversazione ;
In Sweden : total samtalstid ;
In the U. S. S. R. : общая продолжительность разговора.

15. *Chargeable time.* — It is the period of time to be considered for calculating the charge for a call.

Note. — The “chargeable time” can differ from the “overall duration” ;

(a) because the charge is for indivisible periods ;

(b) because account is taken (in determining the chargeable time) of various incidents or difficulties which can occur in the course of the call.

Corresponding terms :

In France : durée taxable de la conversation ;
In Germany : gebührenpflichtige Gesprächsdauer ;
In Spanish-speaking countries : duración computada ;
In the United States of America : chargeable time ;
In Italy : durata tassabile della conversazione ;
In Sweden : taxerad samtalstid ;
In U. S. S. R. : оплачиваемая продолжительность телефонного разговора.

16. *Holding time.* — It is the interval of time during which the international circuit or circuits are occupied by a telephone call (for the conversation and for the necessary operating work, e.g. switching).

Corresponding terms :

- In France : durée d'occupation ;
- In Germany : Belegungsdauer ;
- In Spanish-speaking countries : tiempo de retención ;
- In the United States of America : holding time ;
- In Italy : durata d'occupazione ;
- In Sweden : beläggningstid ;
- In the U. S. S. R. : общая продолжительность занятия цепи.

17. *Operating time.* — The difference between the “ holding time ” and the “ overall duration of a call ”.

Corresponding terms :

- In France : durée des manœuvres ;
- In Germany : Vermittlungsdauer ;
- In Spanish-speaking countries : tiempo de operación ;
- In the United States of America : operating time ;
- In Italy : durata delle operazioni ;
- In Sweden : expeditionstid ;
- In the U. S. S. R. : продолжительность занятия цепи установлением соединения.

18. *Circuit usage.* — It is the percentage value of the ratio between the sum of the “ holding times ” of all the calls carried during a specified period equal to at least sixty minutes, and the length of this period expressed in minutes.

Corresponding terms :

- In France : Coefficient d'occupation d'un circuit ;
- In Germany : Belegungsdauer in Vomhundert ;
- In Spanish-speaking countries : ocupación de un circuito ;
- In the United States of America : circuit usage ;
- In Italy : coefficiente di occupazione di un circuito ;
- In Sweden : procent beläggningstid ;
- In the U. S. S. R. : коэффициент использования (занятости) цепи.

Note. — Except where otherwise indicated, the circuit usage is calculated on the basis of the busy hour for the group of circuits to which the circuit concerned belongs.

19. *Hourly paid time ratio.* — It is the percentage value of the ratio of the number of chargeable call minutes during an hour, to sixty minutes.

Corresponding terms :

- In France : rendement horaire d'un circuit ;
- In Germany : Gebührenminuten je Stunde in Vomhundert ;
- In Spanish-speaking countries : rendimiento de un circuito ;
- In the United States of America : paid time ratio ;
- In Italy : rendimento orario di un circuito ;
- In Sweden : procent taxerad tid per timme ;
- In the U. S. S. R. : коммерческий коэффициент использования цепи.

Note. — Except where otherwise indicated, the hourly paid time is calculated on the basis of the busy hour for the group of circuits to which the circuit concerned belongs.

20. *International transit centre.* — An international terminal exchange which has been chosen to establish communications between two countries other than its own ; this implies that it is directly connected with the two countries.

21. *International service with advance preparation.* — This international telephone service consists essentially in registering the booking of a call, its transmission to the international terminal exchange and, later, on the initiative of the latter exchange, the establishment of the call itself.

In this method of operating, a " booking operator " deals exclusively with call bookings ; the operators at the international terminal exchanges set up the connexion with the calling and called telephones before establishing the call, so as to avoid all loss of time on the international circuits.

22. *International rapid service.*

(a) *Manual rapid service.* — This service comprises essentially the registration of the booking of a call and its immediate transmission to the international terminal exchange which immediately attempts the establishment of the call.

This method of operation implies :

1. In the case where the outgoing exchange is also the international terminal exchange, the booking of the call by an operator who will attempt to set up the call.
2. In the case where the outgoing exchange is not the international terminal exchange, the booking of the call by an operator who transmits this booking immediately to the international terminal exchange which endeavours to establish the call without delay.

(b) *Semi-automatic international service.* — The direct calling of the called subscriber by an operator at the outgoing international terminal exchange, the connexions being established automatically.

Note. — It is admitted for the present that the direct calling of the called subscriber by an operator at an exchange other than the international terminal exchange, is not envisaged.

(c) *International subscriber dialling.* — The direct calling of the called subscriber by the caller, the connexions being established automatically.

23. Traffic carried by a circuit or group of circuits.

1. *Average traffic intensity.* — The average traffic intensity, during a period T , on a group of circuits (or a group of switches) is the sum of the holding times divided by T .

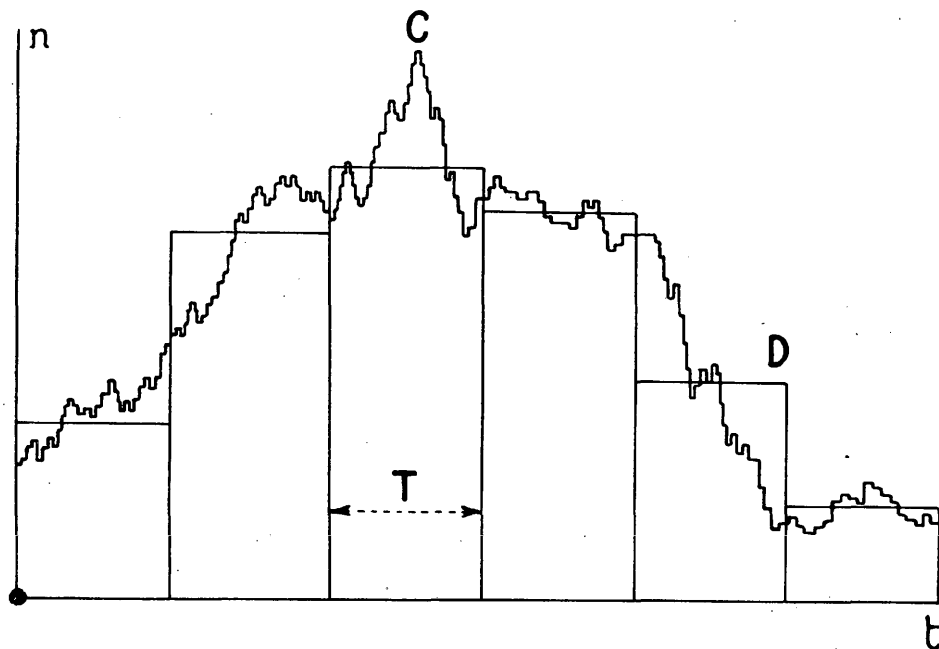
The unit of traffic as defined above is called an “Erlang”.

Explanatory note. — There are automatic equipments for observing at each instant the number of switches or circuits occupied. If the time t is marked as the abscissa and the number n of observed simultaneous occupations as the ordinate, a curve is obtained such as the curve C in the figure below. The mathematical expression for the average intensity of traffic I_m is given by the formula :

$$I_m = \frac{\int_{t_0}^{(t_0+T)} n \, dt}{T}$$

where t_0 is the moment when the period T commences.

Although the average traffic intensity is expressed by a pure number, it is useful to follow this number by the word “erlang” in order to describe the particular magnitude in question, just as the terms “neper” or “decibel” are



used to express attenuation. Calculations of numbers of switches or circuits generally involve an average traffic intensity so that, instead of curve *C*, the pillar-graph *D* in the above figure is used, in which each rectangle has the same area as that contained in the corresponding portion of the curve. The height of each rectangle is the number of erlangs which denotes the average traffic intensity during the period represented by the base of the rectangle. If at no time are all the links fully occupied during the period *T*, this number of erlangs also expresses the traffic to be carried.

The name "erlang" is adopted in recognition of the important work accomplished by the Danish scholar Erlang in the application of probability calculations to the problems of telephony.

2. *Busy hour*. — It is the uninterrupted period of 60 minutes during which the average intensity of traffic handled on a group of telephone circuits (or a group of switches) is the maximum.

It is advisable to make use of the average value of traffic observed in the busy hours during a sufficient number of normal days. In manual operation, in conformity with Recommendation No. 63, observations will be made during the busy traffic hours on a certain number of normal busy days in the year. Exceptionally busy days which can occur close to certain holidays, etc., will be eliminated from the returns. In principle, the returns will be made during the working days of two consecutive weeks, or during ten consecutive working days. The returns will be taken only twice a year if the monthly traffic curve shows little variation. They will be taken three or four times a year if there are appreciable seasonal variations, in order that the average established may be in accordance with representative traffic levels.

When automatic traffic recorders are available, the abovementioned statistics may be repeated for a large number of normal working days.

As it is desirable to have a uniform method of analysing the statistics thus obtained, the following method is recommended for adoption in the international service : the observations are made for quarter-hourly periods. The details obtained for the same day of observation are entered on the same horizontal line. The details for the same elementary quarter-hour period on the different days are added together and the total thus obtained (*A*, *B*, *C*, *D*, etc.) is divided by the number *p* of days of observation. In this way there will be obtained the numbers :

$$a = \frac{A}{p}, \quad b = \frac{B}{p}, \quad c = \frac{C}{p}, \quad d = \frac{D}{p}, \text{ etc.}$$

These numbers are totalled in groups of four (*a* + *b* + *c* + *d*), etc., in order to ascertain the sum of the four consecutive numbers with the highest total. The period of sixty consecutive minutes which corresponds with this maximum sum is the "busy hour" for the group of circuits (or the group of switches) considered.

The Administrations concerned in any one route communicate to each other the average traffic intensities expressed in erlangs for the busy hour.

It is desirable that the Administrations concerned with a particular group of circuits should mutually agree the precise periods during which traffic observations should be carried out simultaneously at the two ends of the circuits.

24. *Normal route.* — In manual operation, the route which must be chosen in the first place for the passing of telephone traffic in a particular service.

In semi-automatic operation, economic reasons could lead to the use of several normal routes (the switching equipment having to be arranged to take account of the different normal routes). There could be, for example, a 1st choice normal route, a 2nd choice normal route, a last choice normal route ; the term "overflow route" is suitable for every normal route other than the first choice one.

Note. — The attention of the International Telegraph and Telephone Administrative Conference should be drawn to this text.

Corresponding terms :

In France : voie normale ;

In Germany : Regelweg ;

In Spanish-speaking countries : ruta normal ;

In the United States of America : normal route ;

In Italy : via normale ;

In Sweden : normalväg ;

In the U. S. S. R. : нормальный путь.

25. *Auxiliary route.* — A route (other than the normal route) to be used whenever it is in the interest of rapidity of the service. Unless there is agreement to the contrary between the countries concerned, the auxiliary route shall pass through the same countries as the normal route.

Corresponding terms :

In France : voie auxiliaire ;

In Germany : Ersatzweg ;

In Spanish-speaking countries : ruta alternada ;

In the United States of America : alternate route ;

In Italy : via ausiliaria ;

In Sweden : reservväg ;

In U. S. S. R. : вспомогательный путь.

26. *Emergency route.* — A route to be used in case of complete interruption or major breakdown of the normal and auxiliary routes. Its itinerary differs from that of the normal and auxiliary routes, either because it does not pass through all the countries traversed by the normal or auxiliary routes, or because it traverses one or more countries through which the normal or auxiliary routes do not pass.

Corresponding terms :

In France : voie de secours ;
In Germany : Hilfsweg ;
In Spanish-speaking countries : ruta de emergencia ;
In the United States of America : emergency route ;
In Italy : via di soccorso ;
In Sweden : hjälpväg ;
In the U. S. S. R. : обходный путь.

RECOMMENDATION No. 2

Decentralisation of international traffic

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 69 ;
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 92 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 121)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the international network ought not be a network exclusively connecting capitals, since such a network would lead to delay in the establishment of calls, a lengthening of the distance covered and congestion of the national network,

Unanimously issues the recommendation :

That, in order to decentralise this network, " international transit exchanges " should be created, analogous to the zone centres or regional centres in the national service ; these centres being interconnected either directly or indirectly by circuits having characteristics recommended by the C.C.I.F. for international circuits.

That, whenever possible, exchanges which already exist should be chosen as international transit exchanges.

Note. — A Committee has established a " General Switching Plan for Europe and the Mediterranean Basin, the Middle East and Southern Asia " (see Recommendation No. 65 hereinafter).

RECOMMENDATION No. 3

Maximum delay for ordinary international calls established with advance preparation

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 70 ;
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 93 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 121)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, although it is desirable to provide a sufficient number of circuits to ensure that calls in the international service are not delayed, it is not always possible to do

so for economic reasons ; but that it is always highly desirable to reduce the delay over each international telephone route to the minimum compatible with the costs of provision of each of the circuits concerned,

Unanimously issues the recommendation :

1. That in normal periods the maximum delay to ordinary private calls, during the busy hour, should not exceed the following values except in special circumstances (circuits wholly on aerial plant, traffic concentrated in a very short period) ;

(a) Half an hour for international circuits not exceeding 500 kilometres in length ;

(b) An hour for international circuits exceeding 500 kilometres in length.

2. That it is desirable for Administrations and recognised private operating Agencies to endeavour to reduce delays to less than the values indicated above if economic circumstances permit.

RECOMMENDATION No. 4

Operation of the intercontinental telephone services

(Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 122)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the rapid development of intercontinental telephone services renders necessary an early understanding between the Administrations and private operating Agencies on the subject of the provisions to be applied,

That, in order to facilitate the running of the service, it is desirable to standardise as much as possible the provisions applied in the various intercontinental telephone services,

Unanimously issues the recommendation,

That the following directives should be followed, as far as possible, by the Administrations and private operating Agencies when they draw up, by common agreement, the provisions covering the operation of a new service by very long distance radiotelephone circuits.

A. — *Facilities offered to the users.*

Distress calls, Government calls, service calls and private calls are admitted in the intercontinental telephone services.

For each of these categories there are two different classes ; station to station calls and person to person calls, the same charge being applied in both cases.

In the intercontinental services, a "Distress call" should be understood to mean a call which should in each case be judged on its merits but which, in general, concerns the safety of human life. Government calls have been defined in Annex III to the International Telecommunication Convention of Buenos Aires, 1952. In the intercontinental service, service calls are calls exchanged (for the operation of the telephone service) either by the Administrations of the countries situated at the two extremities of the same intercontinental radiotelephone circuit, or between the Administrations concerned in a chain of radiotelephone circuits interconnected on a permanent or semi-permanent basis.

"Station-to-station" calls are those booked to a specified subscriber's line.

"Person-to-person" calls are those booked to be exchanged between one specified person and another specified person, these two people being designated in a sufficiently clear manner. It is the responsibility of each Administration, where necessary, to define the area in which the search for the required person should be carried out. In certain cases the search for this person may necessitate the despatch of a messenger if it has not been possible to obtain the person at any telephone station.

In all these categories of call, in the case of person-to-person call, the name of the person booking the call is passed to the called person unless the caller has specified that he does not wish this to be done. The caller can also designate (in a sufficiently clear manner) a person capable of replacing the called person if that person is not available.

In each intercontinental service, the Administrations concerned decide if the case arises whether or not they desire to offer additional new facilities to the public. In this connection, subscription calls and conference calls (*conversations collectives*) may be envisaged.

Subscription calls are those which are booked to be exchanged daily (or possibly for six days per week) between the same stations at the same hour agreed in advance, and for the same duration.

B. — *Validity of call bookings.*

(a) In principle, all intercontinental call bookings (Government calls, service calls, or private calls) from station-to-station or person-to-person, should remain valid so long as they have not been connected, refused by the called person, or cancelled.

(b) The person booking an intercontinental call should be allowed to specify the time at which he would like the call to be established, it being understood that the call will be connected as near the time specified as the exigencies of traffic and the electrical propagation conditions permit.

C. — *Establishment of calls.*

In each intercontinental telephone service the Administrations and/or private operating Agencies concerned should arrange by common agreement the "primary route" and, if possible and desirable, one or more "secondary routes".

The “ primary route ” is that which should normally be used for the establishment of calls, except in the case of traffic congestion, or when transmission on this route is not of a sufficiently good quality, or when it is outside the normal hours of service on this route.

The “ secondary routes ” are used when the primary route cannot be used and they are used in the order pre-arranged by the Administrations concerned.

If an Administration has already prepared calls over a secondary route because the primary route was not available, it is justified in asking that the calls should be established and the conversations exchanged over the secondary route ; it is certainly proper to avoid the use of a secondary route being abused and serving as an order wire for the primary route.

In all cases the charge to the caller is always the same, in the same service, whether the primary or a secondary route is used.

Priorities.

(1) Absolute priority must be accorded to calls concerning the safety of human life at sea, on land or in the air (distress calls) including exceptionally urgent epidemiological calls demanded by the World Health Organization or its Regional Centres ;

(2) Priority must be accorded to exceptionally urgent service calls made with a view to restoring the flow of intercontinental telephone traffic ;

(3) Priority can be accorded to Government calls over all other calls except those indicated in (1) and (2), when priority has been expressly demanded and to the extent that this is possible.

Controlling Exchange.

When a call uses several radiotelephone circuits, the Administrations and/or private operating Agencies agree among themselves to designate the “ controlling exchange ” responsible for placing call bookings in the order in which they should be dealt with ; however, it seems desirable that the terminal exchange on the originating side of the radiotelephone circuit should be responsible for fixing the chargeable time of the call.

D. — Charging in the European system for calls using international land lines either as an intermediate section or as an extension of a call established over radiotelephone circuits.

As regards the use of land lines, whether as an intermediate section, or as an extension of a call established over radiotelephone circuits, it must be noted that the Administrations and private operating Agencies who provide this landline section, benefit from the possibility of having access to numerous countries (although not having to bear the expenses of the costly long distance radiotelephone installations) and consequently these Administrations might, perhaps, agree to accept for the use of these land line sections, less remuneration than in the case of a call made entirely by landline. In any case, these Administrations ought not

to ask for higher payment than that obtained in the case of a call made entirely by landline.

It should also be pointed out that a large number of radiotelephone circuits (contrary to metallic circuits) cannot normally provide a permanent service during the whole of the 24 hours. Therefore it is necessary in the service between two countries in different continents to fix a "primary route" using a certain radiotelephone circuit, and one or more other "secondary routes" using other radiotelephone circuits.

For example between Egypt and Europe, there is a choice (amongst others) between the two following radiotelephone circuits in order to reach the Netherlands or Austria ; either the circuit Cairo-London, or the circuit Cairo-Bern.

Users in Egypt, Netherlands, or Austria do not in any case need to know the route used, and the same charge must be made whatever the route (primary or secondary) used.

Naturally the "primary route" should always be the one using the radiotelephone circuit, the terminals of which are nearest to the two points to be connected, and the maximum charge applicable in the service concerned can be determined by adding to the charge for terminal service on this radiotelephone circuit, the parts of the charge which would normally be collected for the landline extensions to the points in question, using the shortest landline route—if a landline connection is concerned.

For example, for service between Cairo and the Netherlands, the primary route should be Cairo-London ; for service between Cairo and Austria, the primary route should be Cairo-Bern.

The question then arises of the division of the total charge between the countries concerned when the secondary route is used. It appears natural that this division should be made at the prorata of the hypothetical quotas corresponding precisely to that which would have been required respectively, for terminal service, for each of the landline extensions and for the radiotelephone circuit. This can lead occasionally to slightly complicated accounting, and in such a case it would be for the administrations and private operating agencies concerned to reach what seems to them to be the most reasonable agreements.

E. — *Report charge.*

The report charge, which is never collected in addition to the call charge in the intercontinental radiotelephone services, is mainly used as a means of discouraging an intercontinental call booking being made, for example, simply with a view to finding out the whereabouts of a particular person (without any intention of exchanging a conversation), or to obtain other information by using a code pre-arranged with this particular person.

The report charge is included in the international accounts.

The amount of this report charge is fixed by agreement between the Administrations and/or private operating Agencies concerned. It is desirable that this amount should be uniform for all calls in any one service, whatever the route used. In order to facilitate the establishment of the international accounts, it is recommended that this amount constitutes a percentage of the unit charge in the service considered, for example a $\frac{1}{10}$ th.

The following principles should serve as a basis for the application of the report charge :

(a) *Person-to-person calls.*

A report charge is only collected if the caller or the called person is responsible for the failure to establish the call. Such a charge should not be collected if the booking has not been satisfied for other reasons, for example, because the telephone service has not been able to reach the called station.

Consequently, the report charge is levied particularly in the cases indicated below :

1. If, after the called station has been reached, the call is ineffective because the called person refuses the call or cannot be obtained despite several attempts.

2. If, after the called person has been obtained, the call is ineffective because the caller refuses the call or because the called station, after several attempts does not reply, or because the caller cannot be obtained.

3. If, in the case of a call the establishment of which has been deferred, the called person has been advised that he should await a recall on the telephone, but does not reply at the agreed time.

4. If, in the case of a call for a person who is not on the telephone, the called person does not present himself at the telephone although arrangements have been made to advise him.

(b) *“Station-to-station” calls.*

No report charge is applicable to station-to-station calls in the radiotelephone services of the extra-European system where this category of call is admitted.

F. — *Use in the European system of an intercontinental radiotelephone circuit for a broadcast relay.*

There is a case for recommending a minimum duration of use of an intercontinental radiotelephone circuit for a broadcast relay as there are always preparations to be made (which can occupy a circuit for a duration of the order of 15 minutes) and since telegrams or service communications are also exchanged for the purpose of preparing the broadcast relay.

To cover these preliminary expenses in the European International service, a surcharge is made, in addition to the charge corresponding to the duration of the broadcast relay. As a similar surcharge is not collected in the intercontinental services, it seems justifiable to fix a minimum duration of use of an intercontinental radiotelephone circuit for a broadcast relay.

Note for information concerning the charges for calls routed over more than one intercontinental radiotelephone circuit.

The proportion of transit calls routed over more than one radiotelephone circuit, in relation to the whole of the intercontinental traffic, is relatively small, and consequently it is undesirable for this small number of transit calls to introduce accounting rules of too complicated a nature.

Moreover on account of the transmission difficulties encountered on intercontinental radiotelephone circuits, it does not appear advantageous from the point of view of the quality of telephone transmission to have too large a number of radiotelephone circuits interconnected.

The following considerations are therefore limited to the case of the interconnection of two radiotelephone circuits. In such a case the procedure is as follows :

Firstly, if the several charges for the terminal service provided by each of the two circuits independently were added together would the amount thus obtained be so high that there would be a risk of discouraging users and consequently of hindering the development of the intercontinental services ?

If so, consideration should be given to fixing a charge for the through service at a figure lower than the sum of the charge for terminal service for the two circuits concerned taken separately.

The minimum to be considered would probably be the charge which would be applied to a direct radiotelephone circuit ; nevertheless, it must not be forgotten that the transit country provides, for such a call, two expensive radioelectric transmitters and receivers for which it should receive appropriate remuneration. A compromise must therefore be found each time.

In the United States of America the following procedure is generally applied :

If, for example, it was a question of the interconnection of two circuits for which the charge (terminal service) would be 12 dollars for one and 9 dollars for the other, by simple addition, a total charge of $12+9=21$ dollars might be levied but this charge would seem to be too high to attract users. A compromise has therefore been chosen of 15 dollars, it being understood that the 15 dollars should be divided at the pro-rata of the charges for terminal service, that is to say that the first circuit would receive $\frac{12}{21}$ and the second circuit $\frac{9}{21}$ of the 15 dollars.

* * *

Note for information relating to the charges applied in the intercontinental radiotelephone services by the American Telephone and Telegraph Company. — Standard of charges to be applied for terminal services when use is made of a single intercontinental radiotelephone circuit.

The charge is based on the direct distance between the " charge zones " which are defined approximately ; the charge is independent of the routing of the call.

The world is divided into " charge zones " determined by the intersection of the lines of latitude and longitude spaced at ten degrees.

In general each country, state, province (or similar political sub-division) is attached to a single charge zone. Of course the majority of countries do not lie

entirely within the interior of a single charge zone and in such cases the charge zone chosen is generally that in which the greater part of the country lies, or the larger proportion of the population, or the part of the country where the telephone service is most developed.

By an accepted mathematical formula great circle distances between the centres of the charge zones have been calculated and these distances are taken as the basis of charge.

Using :

- (1) the table below giving the basic tariffs, and
- (2) the distances (for charging) calculated according to the principle indicated above, the charges applicable between any two charge zones placed respectively at each extremity of the radiotelephone circuit concerned can easily be determined.

Distances in miles (1 mile = 1609 m)	Charge corresponding to the first three chargeable minutes (Unit of charge)	
	Weekdays (dollars)	Nights and Sundays (dollars)
0 to 500	4.50	3.75
501—1000	6.00	4.50
1001—2000	7.50	6.00
2001—3000	9.00	7.50
more than 3000	12.00	9.00

However, in some cases, the use of the table of charges above would have resulted in an increase over those previously applied. In such a case, this table is not applied rigorously and the present rates have been maintained in order to avoid such increases. In several other cases it may be desirable to employ a level of charges higher or lower than the nearest, in order to maintain the charges in agreement with those which are applied to neighbouring countries having a large community of interest.

RECOMMENDATION No. 5

Preparation of an atlas of international circuits in European cables

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 76;
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 98 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 128)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

In agreement with the General Secretariat of the International Telecommunication Union,

Unanimously issues the recommendation :

That the General Secretariat of the International Telecommunication Union prepares and keeps up to date, an atlas of international circuits in European cables, in conformity with the following details. In view of the rapid development of the European network, this atlas should, in principle, be re-published every two years.

This atlas will comprise five parts :

1° Maps of international telephone cables already in service or which will definitely be in service before a new publication of the atlas ; only staffed repeater stations will be shown (that is to say those in which there is maintenance personnel) and telephone exchanges. A map will be prepared for each European country. On each line representing a cable there will be a reference number corresponding with the same number in the list mentioned below.

2° A list of European international telephone cables, giving for each cable (in table form) concise details of the form of cable (loaded balanced pairs, unloaded balanced pairs with n carrier channels, coaxial pairs) and, for each type of pair, the diameters of the conductors (and where appropriate, also the type of loading) and the type of cable : D. M., Multiple twin quad ; E., star quads ; P. E., cables with pairs cabled in quad pair ; C., coaxial cable.

3° A map of European international circuits for broadcast relays. The different circuits will be represented on this map in the following manner :

in full line, " old type " circuits for broadcast relays (effectively transmitting a frequency band at least from 50 to 6400 c/s) ;

in broken line, " normal " circuits for broadcast relays (effectively transmitting a frequency band from 50 to 10 000 c/s).

For each line, the map will show the number of circuits which can be used for the transmission of music.

4° A map of European international circuits for telegraph transmissions by start-stop apparatus between users [established in accordance with the directives recommended by the International Telegraph Consultative Committee (C.C.I.T.)].

5° A map of European international coaxial cable pairs specially arranged for tests of television relays. (On each line there will be an indication of the frequency band effectively transmitted over the co-axial pair in question).

RECOMMENDATION No. 6

Extension of international telephone services

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 77 ;
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 99 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 130)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the application of the provision of the RTf, enjoining Administrations and recognised private operating Agencies to extend international telephone services to the whole of their territory, will sometimes entail the establishment of calls leaving something to be desired from the point of view of transmission quality,

Unanimously issues the recommendation :

1. That, for services in which transmission difficulties are to be feared, calls admitted in principle should not in fact be established until after tests have been made, between the local terminal exchanges concerned, during the less busy traffic hours ;
2. That, in the case where tests do not give satisfactory results, the Administrations and private operating Agencies concerned should take rapid steps to improve transmission quality, for example by the installation of repeaters or by the elimination of intermediate exchanges.

RECOMMENDATION No. 7

Arrangements to be made for regulating the telephone service between two countries

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 78*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 100 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 130*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the rapid development of the international telephone service and the increasing frequency with which new communication routes are put into use, renders necessary a prompt understanding between the Administrations and private operating Agencies concerned about the provisions to be applied,

Unanimously issues the recommendation :

That, in order to settle the organisation of the telephone service in a given relation, Administrations and recognised private operating Agencies renounce the conclusion of formal agreements signed by the Heads of Administrations or recognised private operating Agencies and that they agree, by simple correspondence, on the subject of the questions listed below :

Telephone service between
(first terminal country in alphabetical order)

and
(other terminal country)

Special provisions

ARTICLE 1. — A telephone service is arranged between ... (first terminal country in alphabetical order) and ... (other terminal country).

To be completed as follows, when the service is arranged through the intermediary of transit Administrations or private operating Agencies :

“through the intermediary of circuits established on the territory of ... (designation of the transit country or countries).”

ART. 2. — The provisions of the International Telephone Regulations, Paris 1949, as well as the C.C.I.F. recommendations referring to the various classes of calls admitted and to the communication facilities listed in the present

document are applied in the telephone service between ... (first terminal country in alphabetical order) and ... (other terminal country).

To be completed as follows, when the service is arranged through the intermediary of transit Administrations or private operating Agencies :

“ through the intermediary of circuits established on the territory of ... (designation of the transit country or countries).”

Under reserve of the following clarifications and additions :

Telephone directories

The sale of the telephone directories of one terminal country to the public in the other terminal country will be in conformity with the provisions of C.C.I.F. Recommendation No. 12 entitled “Telephone directories”.

Orders for the telephone directories of ... (first terminal country in alphabetical order) will be addressed to ... and for the telephone directories of ... (other terminal country) will be addressed to ...

Urgent private calls

Urgent private calls are (or are not) admitted.

Lightning calls

Lightning calls are (or are not) admitted.

Government calls

Urgent Government calls are (or are not) admitted. Government lightning calls are (or are not) admitted.

Subscription calls

Subscription calls are admitted during the hours of light traffic.
They are (or are not) admitted during the hours of heavy traffic.

Occasional fixed time calls

Occasional fixed time calls are (or are not) admitted.

Picture calls

Picture calls are (or are not) admitted.

Avis d'appel calls and préavis calls

Avis d'appel calls are (or are not) admitted. Préavis calls are (or are not) admitted. Avis d'appel calls with express are (or are not) admitted. The surcharge for delivery, beyond the free delivery area, is fixed at ... gold francs for avis d'appel to ... (first terminal country in alphabetical order) and at ... gold francs for avis d'appel to ... (other terminal country).

Stock Exchange calls

Stock Exchange calls are (or are not) admitted.

Collect. calls

Collect calls are (or are not) admitted.

Requests for information

Requests for information are (or are not) admitted.

Tariffs

1. Zones.

For the determination of terminal charges :

The territory of ... (first terminal country in alphabetical order) is divided into ... zones.

or : comprises only one zone.

The territory of ... (second terminal country according to alphabetical order) is divided into ... zones.

2. Zonal limits.

(First terminal country according to alphabetical order) :

The first zone comprises (give details as appropriate) :

— the following departments or provinces or geographical districts (listed in alphabetical order) :

— or : the networks situated to the west (or to the south, or to the north, or to the east) of a line passing to the east (or to the north, or to the south, or to the west) of the following towns (listed in geographical order from a point on a given frontier) ;

— or : the networks situated to the south (or to the north) of ... degrees of latitude or to the east (or to the west) of ... degrees of longitude ;

— or to the east (or to the west) of the ... meridian.

The second zone comprises :

.....
(Second terminal country according to alphabetical order) :

The first zone comprises :

.....
The second zone comprises :
.....

3. Unit charge.

The total unit charge for each service and the portion accruing to each Administration or to each private operating Agency are indicated in the following table :

SERVICE BETWEEN	TOTAL Unit charge	PART due to country A	PART due to country B	PART due to 1st transit country	PART due to 2d transit country	PART due to 3d transit country
Network from which the crow-flight distance does not exceed ...kilometres						
Network from which the crow-flight distance is more than ... kilometres but does not exceed ... kilometres						
Country A, { Country B, 1st Zone 1st Zone, { Country B, 2nd Zone Country B, 3rd Zone						
Country A, { Country B, 1st Zone 2nd Zone, { Country B, 2nd Zone Country B, 3rd Zone						

4. Charge periods.

The hours of light traffic are the following : 19 hours to 8 hours (legal time in the country of origin).

During the period of light traffic, the charge for an ordinary call of three minutes is fixed at three fifths ($\frac{3}{5}$) of the unit charge.

5. Method of charging :

(a) In the case of services between neighbouring countries. Services between neighbouring frontier networks in which the charges are for indivisible three-minute periods, are understood to be the services between networks separated by a crow-flight distance not exceeding ... kilometres ;

(b) The facilities envisaged in C.C.I.F. Recommendation No. 24 entitled " Modifications of bookings at the request of the caller " are (or are not) admitted ;

(c) The provisions of the RTf (Article 49 § 7 (3)) and of C.C.I.F. Recommendation No. 52 entitled " No reply from the calling or called subscriber ", envisaging the application of a charge, equal to that applied in the case of a refusal, in the event of no reply from the calling or called subscriber's line, are (or are not) admitted.

RECOMMENDATION No. 8

Opening of new services — Publicity calls

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 82 ;
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 104 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 134)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is important that customers should not only be informed about the opening of new telephone services to the public but also verify that the transmission quality is good over new or improved circuits,

Unanimously issues the recommendation,

1. That the Administrations and private operating Agencies concerned jointly decide the conditions in which publicity calls will be admitted for a maximum period of one month from the date of the inauguration of a new telephone service, or a notable improvement in transmission quality over an existing route (placed in a cable, constitution of direct circuits, etc. ...);

2. That publicity calls should be admitted free of charge for a duration generally not exceeding six minutes and, for preference, in favour of the representatives of organisations likely to inform the users about new facilities offered to the public;

3. That publicity calls should not be offered if transmission quality is not generally good over the route concerned or if the load on this route will not permit of a material increase in traffic.

RECOMMENDATION No. 9

Form to be used for indicating to telephone exchanges the normal and auxiliary routes

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 82;*
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 104 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 135)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

Firstly, that the RTf prescribe the determination of the auxiliary route or routes to be used in new services to be opened,

Secondly, that the current development of the means of international communication generally permits of the employment of several routes, and that it is desirable to avoid any hesitation on the part of the operating services in the choice of itineraries,

Unanimously issues the recommendation :

That Administrations and recognised private operating Agencies use the following form for indicating, to the main telephone exchanges in their respective countries, the international routes which are available from these exchanges.

*List of authorised routings from ... (name of exchange) ...
to (name of foreign country)*

PRINCIPAL EXCHANGES IN ... (name of foreign country)	ZONE	CHARGE	NORMAL route	AUXILIARY routes

RECOMMENDATION No. 10

Use of auxiliary routes in the rapid international telephone service

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 83;
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 105 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 136)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the use of auxiliary routes for the disposal of calls in the event of congestion of the normal route can be of value because it may :

- (a) reduce the delay imposed on the caller ;
- (b) improve the efficiency of the circuits in service by increasing the value of routes carrying a given traffic ;

That, nevertheless, the use of an auxiliary route is of no advantage to the rapidity of the service if several additional transits are thereby introduced ;

That the advantage of using auxiliary routes is most noticeable when the normal route comprises only a small number of circuits ;

That the routing of calls by an auxiliary route over a group of circuits ought not to prejudice the disposal of traffic which must use this group as the normal route ;

Unanimously issues the recommendation :

1. That the use of auxiliary routes in the rapid international service is desirable, subject to the following reservations :

- (a) The use of an auxiliary route must not require the intervention of more than one additional transit exchange compared with the normal route ;
- (b) The auxiliary route should, for preference, be over a large group.

2. That the arrangements made for the use of auxiliary routes envisage :

(a) immediate access by any one operator to the normal route and to the auxiliary route ;

(b) a preliminary agreement between the corresponding countries on the designation of the auxiliary routes to be used in the various services.

RECOMMENDATION No 11

Emergency routes

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 84*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 106 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 137*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to take measures so that in the event of total interruption or a major fault affecting an international route, the traffic normally carried by that route can be assured ;

That the use of emergency routes in exceptional circumstances should not result in a modification of the charges to users (RTf Article 31, § 3) ;

That in general, the traffic diverted over emergency routes amounts to only a very small percentage of the total traffic ;

That allowance for the charges relating to calls diverted over emergency routes often involves much correspondence and delays settlement of the international accounts ;

That it is desirable that the terminal country responsible for the presentation of the accounts knows by what itinerary the call diverted to an emergency route has been established ;

That when an interruption of the normal land (or submarine) route, providing an extension of a radiotelephone service, makes it necessary to use an emergency land (or submarine) route, the interruption which necessitates the use of another land (or submarine) itinerary is in no way chargeable to the radiotelephone service itself, nor to the Administration or private operating Agency which operates that service ;

Unanimously issues the recommendation :

1. That the Administrations and private operating Agencies concerned determine, by common agreement, the emergency route or routes which should be used in the event of total interruption or a major fault affecting the normal or auxiliary routes, and that any route not traversing the same countries as the normal and auxiliary routes should be considered as an emergency route ;

2. That a list of international telephone routes used in Europe should be established and kept up to date by the C.C.I.F. Secretariat (list showing the normal, auxiliary and emergency routes) for the various services ;

3. That the call charges for conversations exchanged exceptionally over emergency routes should be the same as for use of the normal route ;

4. That calls exchanged over emergency routes always enter into the international accounts for their full chargeable duration ;

5. That, when an emergency route is used, the total charge for the normal route (between first charging zones of the terminal countries) should be divided equally between the various Administrations concerned in the emergency route under consideration ; that is to say that all these Administrations receive an equal part, whatever the nature or the length of the conductors used. (When the network of destination is beyond the first charging zone, the outgoing country should carry into the account for the incoming country, a portion of the charge equal to the difference between that appropriate to the situation of the network of destination and the charge for the first zone). In order to permit of the application of this procedure in the case of a call involving an international transit exchange, it is necessary for the operator at the transit exchange to indicate each time to the operator at the outgoing international terminal exchange, the emergency route used.

Examples

Service Netherlands-France. — Emergency route : Amsterdam-Zurich (passing through Belgium and France) and Zurich-Paris.

Total charge for the normal route (between first zones) : 2.90 gold francs.

Division when the emergency route is used : Netherlands, Belgium, Switzerland, France ;

$$\text{each} \quad \frac{2.90}{4} = 0.725 \text{ gold francs.}$$

Service Belgium-Great Britain. — Emergency route : Brussels-Amsterdam-London.

Total charge for the normal route (between first zones) : 4.50 gold francs.

Division when the emergency route is used : Belgium, Netherlands, Great Britain ;

$$\text{each} \quad \frac{4.50}{3} = 1.50 \text{ gold francs.}$$

6. That, when it is necessary to use a land emergency route, because of the interruption of the normal land (or submarine) route providing an extension of a radiotelephone service, the global charge relative to the land (or submarine) route between the radiotelephone station and the terminal exchange, should be divided in conformity with the rules outlined above in § 5.

RECOMMENDATION No. 12

Directories

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 86*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 108 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 139*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That under the terms of the Telephone Regulations of Paris, 1949 (Article 7), subscribers should be classified by districts,

Unanimously issues the recommendation :

That the adoption of the following general arrangements for the preparation of directories is desirable :

(a) Subscribers being classified by districts, each volume of the directory can usefully contain a recapitulative list of the districts covered by the volume ;

(b) The classification of names in each district being always in alphabetical order, when several subscribers have similar names it is desirable to classify them according to their first names, or the initials of the first names.

(c) It is desirable to display prominently, for example on the covers of directories, the emergency numbers for calling " police " or " fire " services ; or when these services do not have special numbers, to show clearly and prominently the method of obtaining them quickly by telephone ;

(d) It would be desirable from the point of view of the international telephone service, that the directories (especially those which are supplied to other Administrations or private operating Agencies) should be composed in Latin characters, particularly those relating to the names and addresses of subscribers ;

(e) Directories sent to Administrations or recognised private operating Agencies of a country, which are written in a language other than the language used in that country, shall be accompanied by an explanatory note to facilitate the use of these directories, this note being drawn up in whatever official language of the Union shall have been agreed upon by the Administrations and/or private operating Agencies concerned.

(f) Since Administrations and private operating Agencies already publish special detailed booklets for frequent users of the international telephone service, reference to this service in the general information about the telephone service usually placed at the front of directories, can be limited to a list of international telephone services open to the public and a list of charges for calls to the principle foreign towns.


RECOMMENDATION 12 bis

Use of speech recording apparatus associated with subscribers' telephones

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering the inconvenience which may arise when speech recording apparatus associated with telephones is connected without the knowledge of one of the two subscribers concerned,

Unanimously issues the recommendation :

That speech recording apparatus, installed at subscriber's premises with the approval of the Administration or private operating Agency in the country concerned, should be indicated by means of a special sign in the telephone directory (for this purpose the sign  already used by certain Administrations should be employed) ;

That such Administrations or private operating Agencies ought also to invite the owners or renters of such equipment to mention the fact on their letter paper by means of a printed indication.

Considering, moreover, the need to facilitate the disposal of international traffic in the case where an international call terminates on a speech recording apparatus, placed at the premises of the called subscriber and substituting for him in his absence, to collect messages (that the called person could hear later) or transmit a message to the caller,

Unanimously issues the recommendation :

That the presence of such an equipment ought to be announced to the caller by means of a verbal announcement when a call terminates on such an equipment. This verbal announcement should quote the called subscriber's number, the exchange to which he is attached, his name and a clear indication of the moment at which the caller should speak. An international call terminating on such an equipment could take place under these conditions, since the caller will be informed either directly, or by means of an operator in the international service, of the conditions under which his message can be recorded.

RECOMMENDATION No. 12 ter (New Recommendation)

International list of telephone exchanges

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the absence of the publication of an International list of telephone exchanges has not hampered the disposal of international telephone traffic operated manually,

That in the semi-automatic service a particular group of positions will serve a given route,

That the operators at these positions will need to know only the exchanges served by this route with all the necessary information for routing the calls (and possibly the charges for the purpose of informing the caller).

That in an entirely automatic international service (subscriber to subscriber) such a list would be even less useful, since the routing will be determined by the international code together with the first digit or first two digits of the national number of the called subscriber,

Unanimously issues the recommendation :

That the publication of an " International list of telephone exchanges " by the General Secretariat of the International Telecommunication Union can be dispensed with ;

That the different countries taken two by two should exchange lists of their principle local networks with all the necessary information for the routing and charging of calls.

RECOMMENDATION No. 13

Publication of booklets showing authorised international telephone services, the facilities allowed and the corresponding charges

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 87;*
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 109 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 140)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to inform the public about the facilities currently available in the international telephone service,

Unanimously issues the recommendation,

(a) That the Administrations and private telephone operating Agencies publish a pamphlet showing the authorised international telephone services, the facilities offered in each of these services and the corresponding charges. In order to induce subscribers to keep and read this booklet, it would be desirable for it to be given an attractive appearance which could vary according to the country, in a manner best adapted to the psychology of each body of users *. The pamphlets should not contain publicity matter.

* In certain countries where these booklets have been published, the Administrations or recognised private operating Agencies have considered it preferable, instead of distributing them by post, to deliver them by agents of the Administration or private operating Agency who can give users any additional information they require.

It would be useful to ask the Chambers of Commerce in the various countries to recommend their members to use the booklets specially published by Administrations and private operating Agencies to facilitate the use of the international telephone service; in particular, it would be desirable for each user having an installation staffed by a private operator to see that this operator is well acquainted with these booklets ;

(b) That Administrations and recognised private operating Agencies receive, through the C.C.I.F. Secretariat, a copy of each of the booklets which already exist or else of each booklet markedly different in form from earlier issues ;

(c) That, in order to assist users in reading the different booklets published by the various Administrations and recognised private operating Agencies, it is desirable that these publications should be drawn up in accordance with the following uniform plan :

1. — PLAN FOR THE INTRODUCTION

A. In front, a schematic map showing, by colours or hatching, the countries where there are public services and by arrows, those services having direct circuits ; these various indications can equally well be given with the aid of two distinct schematic maps.

B. An introduction describing the general state of international telephony in respect of the country under consideration, and emphasising the high quality of the service and the advantages which result from its use by merchants and manufacturers.

C. A table showing the relationship between legal time in the different countries, mid-day in the country publishing the booklet being taken as the basis.

D. A table of contents enabling any desired general information to be found readily as well as specific information about each of the countries concerned.

E. The actual text of the booklet will follow, and will be divided into two parts dealing respectively with the European and the extra-European services.

II. — PLAN FOR THE PART RELATING TO THE EUROPEAN SERVICE

Chapter I. — Method of booking an international call :

1. Name of the town required and, as necessary, the name of country.
2. Particulars of the called telephone ;
3. Designation of the calling telephone ;
4. When necessary, the class of call.

Method of charging. Definition of the unit charge. Limited duration calls. Determination of the chargeable duration of a call. Heavy and light traffic periods.

Chapter II. — Various classes of calls : urgent ; lightning ; stock exchange ; occasional fixed time ; subscription ; collect ; with avis d'appel or préavis.

Chapter III. — (a) Various facilities ; duration of validity of a call ; cancellation ; refusal ; deferred call ; modification of a booking already made ; request for information ; supply of foreign directories, etc.

(b) System of naming the letters of a word used in the international system.

Chapter IV. — Indication of zones and charges, especially for each country to which there is a service, the countries being arranged in alphabetical order. The above information could be made clear in maps. (See the accompanying example relating to the service between Switzerland and France).

III. — PLAN FOR THE PART RELATING TO THE EXTRA-EUROPEAN SERVICE

Chapter I. — Method of booking a call :

1. Name of the town required and, as necessary, the name of the country.
2. Designation of the called telephone or complete address of the called person.
3. Designation of the calling telephone.
4. Approximate time at which the caller wishes to have the call.

Method of charging. Definition of unit charge. Limited duration calls. How the chargeable duration of a call is determined (from the moment when the two persons have been put into conversation, the periods of defective transmission quality being deducted).

Chapter II. — Classes of calls (indicate the classes in the European service which are not admitted in the extra-European service).

Chapter III. — Indication of zones and charges, especially for each country to which there is a service, the countries being arranged in alphabetical order. This information is completed by particulars of services with ships at sea. The above particulars could be made clear in maps.

The booklet will end with one or more blank pages enabling users to note the address and telephone number of their most usual correspondents.

Note. — Several administrations and private operating agencies employ a loose-leaf system which facilitates keeping the booklets up to date.

ANNEX

Table concerning the services between France and Switzerland

FRANCE

France is divided into four zones comprising the following Departments :

First zone. — Ain, Doubs, Jura, Haut-Rhin, Haute-Saône, Territoire de Belfort, Savoie, Haute-Savoie, Vosges.

Second zone. — Côte-d'Or, Isère, Loire, Haute-Marne, Meurthe-et-Moselle, Meuse, Moselle, Bas-Rhin, Rhône, Saône-et-Loire.

Third zone. — Aisne, Allier, Basses-Alpes, Hautes-Alpes, Alpes-Maritimes, Ardèche, Ardennes, Aube, Aveyron, Bouches-du-Rhône, Cantal, Cher, Corrèze, Creuse, Drôme, Gard, Hérault, Indre, Haute-Loire, Loiret, Lozère, Marne, Nièvre, Puy-de-Dôme, Seine, Seine-et-Marne, Seine-et-Oise, Var, Vaucluse, Haute-Vienne, Yonne.

Fourth zone. — Departments other than those included in the first three zones.

Switzerland constitutes a single charging zone in the telephone service between France and Switzerland.

FRANCE		Switzerland
Zones	Principal towns	
1st zone	Annecy, Chambéry, Bourg, Besançon, Vesoul, Epinal, Mulhouse, Colmar	231 Fr.
2nd zone	Lyon, Saint-Etienne, Mâcon, Dijon, Nancy, Metz, Strasbourg	375 Fr.
3rd zone	Nice, Marseille, Montpellier, Nîmes, Clermont-Ferrand, Limoges, Moulins, Orléans, Paris, Reims	489 Fr.
4th zone	Biarritz, Toulouse, Bordeaux, Poitiers, Nantes, Rennes, Brest, Rouen, Le Havre, Lille	606 Fr.
Frontier services	Between local systems forming part of a French district and a group of exchanges in the Swiss trunk service, when the chief town of the district and the group centre are :	less than 15 kilometres apart
		from 15 to 30 kilometres apart
		58 Fr.
		87 Fr.

B. VARIOUS CLASSES OF CALLS AND FACILITIES AVAILABLE TO THE PUBLIC

RECOMMENDATION No. 14

Subscription calls

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 91*;
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 113 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 144*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

That subscription calls should be admitted and charged for in accordance with the following directives which clarify and complete Articles 15 and 39 of the RTf:

I. — CONDITIONS OF ADMISSION

A subscription is contracted for a period of at least one month ; the holder can declare in advance that he does not require his call on any one day of the week, this day being the same each week and specified in advance in the contract.

No further reductions in the charge can be allowed, even if the holder foregoes the calls on several days of the week.

Nevertheless, by special agreement between the Administrations or private operating Agencies concerned, subscription calls can be allowed for one or several indivisible periods of seven consecutive days from any date and not renewable by tacit agreement ; but, in this case, no abatement is allowed to the holder who foregoes any subscription call.

During the period of heavy traffic, the duration of a subscription call (monthly or weekly) can be limited (in conformity with Article 15, § 5, of the RTf) from the moment the subscriber signs the subscription contract.

During the period of light traffic, the duration of subscription calls, specified in the contract, is not limited.

The holder of the subscription contract can be authorised to continue his conversation beyond the duration specified in the contract. However, such an extension of the duration of a subscription call may be refused or limited (in conformity with Article 15, § 7, and Article 29 of the RTf) especially if this is necessary to satisfy a booking of a call of a superior class, or if there is congestion or a break-down in the service concerned.

The holder of a subscription contract may be authorized to exchange his telephone call temporarily with a station not forming part of the local system indicated in the subscription contract but being in the same country.

However, in the case of a monthly subscription, one transfer only per month may be allowed. In the case of a weekly subscription, extended to a month, one transfer only may be allowed during this month. Further, a request for transfer must be made at least 24 hours in advance.

The conditions in which this transfer facility is allowed are the following :

(a) If the subscription call is to be transferred to a station in a cheaper charge zone than that in which the station indicated in the subscription contract is situated, no reimbursement of charge is made by the Administration or private operating Agency to the subscriber.

(b) If the subscription call is to be transferred to a station forming part of a local system, situated in a more expensive charge zone than that in which the station indicated in the subscription contract is situated, the Administration or private telephone operating Agency requires the subscriber to agree, before transfer of the call for a specified period, to pay a supplementary charge for each day of the aforementioned period of transfer ; this supplementary charge which is equal to the difference between the unit charge which corresponds with the first request and that which corresponds with the second request, is collected by the Administration of the country where the person holding the subscription contract is resident and it is included in the international accounts ;

(c) The period of temporary transfer of the subscription call may not exceed seven days in the case of a monthly subscription.

II. — CHARGING

Subscription calls are subject to the following charges :

(a) During the period of light traffic : at the maximum, to half the charge for an ordinary call of the same duration exchanged during the heavy traffic period ;

(b) During the period of heavy traffic : to the charge for an ordinary call of the same duration exchanged during the said period of heavy traffic ; however, during certain busy periods, to be determined if necessary for each service by the international terminal exchanges concerned, subscription calls can be subjected to double the charge for an ordinary call of the same duration exchanged during the said period of heavy traffic *.

The monthly amount of the subscription is calculated on the basis of thirty days ; nevertheless, if the holder declares in advance that he waives the use of his

* See Recommendation No. 45 concerning charging for subscription calls allowed between 16 hours and the time of commencement of the light traffic period.

subscription one specified day in each week of his contract, the monthly amount is calculated on the basis of twenty-five days.

III. — AGREEMENT TO BE CONCLUDED BETWEEN THE EXCHANGES
AND THE SUBSCRIBERS FOR SUBSCRIPTION CALLS

Agreements relating to the acceptance of subscription calls are made by telephone between international terminal exchanges during the hours of light traffic ; and confirmation is sent by the originating international terminal exchange to the other international exchanges concerned ; these advise the other exchanges in their country concerned in the establishment of the call as necessary.

This written confirmation is drawn up as follows :

Confirmation of the agreement relating to the subscription call accepted on the ... 19 ... A call of ... minutes to be established every day except on ...* at ... hours (legal time) from ...** between telephone No at ... and telephone No. ... at ..., from date ... 19 ...

For confirmation

Exchange ..., date ... 19 ...

Signed :

*Specimen contract for a monthly subscription *** (right hand page)*

Administration (or private operating Agency) of ... (country of origin).

I ... the undersigned ..., of (address) ... agree to subscribe for the time being, under the general conditions shown on the left, to a monthly contract detailed below, as from ...

FULL TELEPHONE NUMBERS		TIME at which the call should be established *	DURATION of the call	DAY of each week on which the call is not required	MONTHLY charge
from	to				
concluded at, date					
* Legal time in the country where the agreement is concluded.					

* Show here, if necessary, the day of the week on which, each week, the holder of the contract wishes to waive his call.

** Name of the country where the contract is concluded.

*** In the case where the contract is, for example, for a period of seven consecutive days, it will be necessary to modify the text of this specimen accordingly (see the notes at the foot of the page).

Specimen contract for a monthly subscription (left hand page)

General conditions of the contract

ARTICLE 1. — Subscription calls are those which are expected to be exchanged daily (with the possible exception of one day of the week which is the same every week and is specified in advance in the contract) between the same stations, at the same time agreed in advance, for the same duration, and which have been booked for a whole month at least.

The duration of the contract may be extended from month to month by tacit agreement *.

The contract may be terminated by one of the parties after the first monthly period, by notice given eight days before the end of another monthly period.

ART. 2. — Subscription calls must relate exclusively to the personal affairs of the correspondents or their firms.

ART. 3. — The minimum duration of a subscription call is three minutes. Calls of a duration in excess of six minutes may be allowed if traffic conditions on the circuits concerned permit.

ART. 4. — Subscription calls are subject to the following charges :

(a) During the period of light traffic **: to half the charge for an ordinary call of the same duration exchanged during the heavy traffic period ;

(b) During the period of heavy traffic **: to the charge for an ordinary call of the same duration exchanged during the said period of heavy traffic. However, between ... and ... hours, this charge is doubled) ***.

The monthly amount of the subscription is calculated on the basis of thirty days ; nevertheless, if the holder declares in advance that he waives the use of his subscription on one specified day in each week of his contract, the monthly amount is calculated on the basis of twenty-five days.

The subscription charge is collected in advance.

No further reductions in the charge can be allowed, even if the holder foregoes the calls on several days of the week.

ART. 5. — The subscription contract may take effect from any date, but the monthly period shall begin only on the first day of each month. The amount of the subscription relating to the first monthly period shall be increased, if necessary by the part of the amount of the monthly subscription corresponding to the period comprised between the date of its entry into force and that of the beginning of the monthly period.

* The subscription contracted for one or several indivisible periods of seven consecutive days is not renewable by tacit agreement.

** From ... hours to ... hours.

*** Complete, or delete, the item in brackets as necessary.

ART. 6. — The subscription call is set up between the two specified stations at the time stated in the subscription contract if, at this time there is, between the international terminal exchanges concerned, a circuit on which no call is in progress and on which no distress call, no lightning call and no urgent Government call is on hand (or if, in the services where lightning and/or urgent Government calls are not admitted, no priority Government call is on hand). Otherwise the subscription call is established as soon as possible on the first circuit fulfilling these conditions after the time fixed.

In the “ rapid service ” method of operating, a subscription call is established on the initiative of a suspended call operator at the outgoing international terminal exchange.

A subscription call shall be definitely disconnected when the caller gives the signal that the call is ended before the expiry of the duration specified for each subscription call. If, at the end of this duration, the caller has not already given the signal that the call is ended, the call shall be disconnected by the operator, unless the caller expresses a wish to continue the call. In this case he may be authorised to continue the call, the total duration of which, however, could be limited to twelve or even six minutes, either because this is necessary to satisfy a booking of a call of a superior class, or because of congestion or a breakdown in the service concerned. Extra conversation following a subscription call shall be charged by the minute, at the rate applicable to subscription calls during the charge period or periods during which such additional conversation is exchanged.

ART. 7. — When, from a cause attributable to the subscribers, a subscription call does not take place or has less than the specified duration, no compensation or reimbursement is allowed.

When, from a cause attributable to the telephone service, a subscription call does not take place or has less than the specified duration, the call is replaced by one of equivalent duration to the unused period and exchanged as soon as possible after the specified time, with priority over other calls of the same class. If the call has not been thus replaced or compensated, only the charge for the time used is carried into the international accounts ; if the time used is less than three minutes, no charge is brought to account. In calculating this charge for the time used, the charge corresponding to the whole of the duration specified for an individual subscription call is taken as a basis, and this basic charge is equal to one twenty-fifth ($\frac{1}{25}$) or a thirtieth ($\frac{1}{30}$) of the monthly amount of the subscription contract, whichever the month considered *.

ART. 8. — The person who enters into a subscription contract, provided he makes application in writing at least twenty-four hours in advance, may be authorised exceptionally to exchange his call with or from a station other than those indicated in the subscription contract, but forming part of the same local system.

* In the case of a contract signed for a period of seven consecutive days, the basic charge is equal to a seventh ($\frac{1}{7}$) of the amount of this contract.

ART. 9. — The holder of a subscription contract may be authorised to exchange his telephone call temporarily with a station not forming part of the local system indicated in the subscription contract but being in the same country.

However, in the case of a monthly subscription, one transfer only per month may be allowed. In the case of a weekly subscription, extended to a month, one transfer only may be allowed during this month. Further, a request for transfer must be made at least 24 hours in advance.

The conditions in which this transfer facility is allowed are the following :

(a) If the subscription call is to be transferred to a station in a cheaper charge zone than that in which the station indicated in the subscription contract is situated, no reimbursement of charge is made by the Administration or private operating Agency to the subscriber.

(b) If the subscription call is to be transferred to a station forming part of a local system, situated in a more expensive charge zone than that in which the station indicated in the subscription contract is situated, the Administration or private telephone operating Agency requires the subscriber to agree, before transfer of the call for the specified period, to pay a supplementary charge for each day of the aforementioned period of transfer ; this supplementary charge which is equal to the difference between the unit charge which corresponds with the first request and that which corresponds with the second request, is collected by the Administration of the country where the person holding the subscription contract is resident and it is included in the international accounts ;

c) The period of temporary transfer may not exceed seven days in the case of a monthly subscription.

RECOMMENDATION No. 15

Occasional fixed time calls

(Yellow Book, *Volume I, XIVth P.A. Montreux 1946, p. 96 ;*
Yellow Book, *Volume I bis, XVth P.A. Paris 1949, p. 118 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 150*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to avoid operating difficulties in the general service arising from the introduction of occasional fixed time calls ;

That it is desirable, however, to increase as much as possible the time for which circuits are used during the hours of light traffic without this involving an increase of staff ;

That the exchange of calls of long duration results in increased financial return on the circuits,

Unanimously issues the recommendation :

That there is a need to complete provisionally Article 16, § 2 of the International Telephone Regulations (Paris, Revision 1949) by the following text :

“ Occasional fixed time calls should be booked at least half an hour in advance. However, in the case of those occasional fixed time calls which necessitate important modifications to lines or installations, it may be necessary to require that bookings shall be made longer in advance, for example at least one hour in advance.

If several occasional fixed time calls are booked for the same time, on the same circuit, the calls shall be established in the order of the reception of these bookings at the controlling exchange.

Occasional fixed time calls of long duration during the period of light traffic are only allowed provided that no inconvenience for the general service will result.”

Considering, moreover,

That, in the European service, there still exist international services where the number of circuits is relatively small for the traffic to be disposed of and where, in fact, only “ lightning ” and “ urgent ” calls can be disposed of within a reasonable period of delay.

That, in such international services, the admission of a period of light traffic would afford too much advantage to persons booking occasional fixed time calls giving them in fact a priority over urgent calls when they only pay the ordinary charge (Article 40, § 2 (1) of the RTT),

Unanimously issues the recommendation :

That in international services where the number of circuits is relatively small for the traffic to be disposed of, it should be considered that there is only one charge period during the 24 hours, namely the period of heavy traffic, and occasional fixed time calls should uniformly be subject to the double charge increased by a supplementary charge equal to one minute of ordinary conversation.

Considering further,

That an occasional fixed time call necessitates, for the exchange of supplementary service conversation which it causes, a certain occupation of international circuits which ought to be remunerated in all cases,

Unanimously issues the recommendation ;

That it is not desirable to fix a maximum period of delay in establishment beyond which the supplementary charge of one minute of conversation would cease to be applicable to an occasional fixed time call which it has not been possible to connect at the time indicated by the caller.

Considering finally,

That the general principle of Article 49 of the International Telephone Regulations (Paris, Revision 1949) is never to superimpose the surcharges applied to the various categories of international calls,

Unanimously issues the recommendation :

That there is a need to complete provisionally Article 49 of the International Telephone Regulations (Paris, Revision 1949) by the following paragraphs :

“ In the case where the préavis accompanying a booking for an occasional fixed time call is not followed by a conversation, the caller shall defray only the surcharge relating to the préavis, that is to say the cost of one minute of ordinary conversation during the same charge period when the préavis was transmitted.

In the case where the caller having booked an occasional fixed time call with a préavis cancels his booking after the relative particulars of this booking have already been transmitted by the outgoing international terminal exchange, only the surcharge relating to the préavis is collected. ”

RECOMMENDATION No. 16

Deferred telephone calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 97*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 119 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 152*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That deferred calls would be prejudicial to the general evolution of the international telephone service in which the aim is constantly to reduce delays ;

That deferred calls would be a source of disappointment to the subscriber due to the uncertainty of the time at which the call would be set up ;

That these calls would be a source of difficulties for the operating services because of the increase in service conversations which would result therefrom ;

That it is not desirable to create a new class of call and complicate the calculation of charges and the preparation of accounts ;

Unanimously issues the recommendation :

That it is not desirable to introduce a new class of call at a reduced rate, called “ deferred calls ”, in the international telephone service.

RECOMMENDATION No. 17

Avis d'appel and préavis calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 97*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 119 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 153*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the International Telephone Regulations (Paris Revision, 1949) (RTf) do not contain sufficiently detailed provisions concerning the establishment of *avis d'appel* or *préavis* calls ;

Unanimously issues the recommendation :

That the provisions of the RTf concerning *avis d'appel* and *préavis* calls should be completed as follows :

I. — AVIS D'APPEL CALLS

§ 1. — (1) The avis d'appel (defined in Article 18, § 1, of the RTf) are delivered in the same way as telegrams. Where necessary, the express charge (Article 42) is collected from the caller.

(2) When the caller states at the time of booking an avis d'appel call that the called person lives outside the area of free delivery of telegrams and that the caller will pay the express charge, the transmission of the avis d'appel is preceded by the words "express paid".

When the caller is unable to say whether or not the called person lives outside the area of free delivery of telegrams, he is warned by the originating exchange that he may have to pay the express charge. It is pointed out to him that Administrations and recognised private operating Agencies will do their best to deliver the avis d'appel in good time to the called person but that they cannot guarantee to do this when the called person does not live within the area of free delivery of telegrams.

When an exchange receives for delivery an avis d'appel not bearing the words "express paid" and where the addressee does not live within the area of free delivery, it informs the originating exchange of the fact. If the caller refuses to pay the express charge the booking is cancelled, but the avis d'appel supplementary charge is collected.

§ 2. — An avis d'appel contains only the following information :

1. The name of the caller and, where necessary, his telephone number ;
2. The name of the called person and, if necessary, the name of a substitute, and their full address ;
3. If necessary, the time after which the booking is to be cancelled or the period during which the call must not be set up.

These particulars are transmitted as quickly as possible from exchange to exchange * and are prefixed by the words "avis d'appel" **. The called exchange records them on the form for delivery to the called person.

The person booking an avis d'appel call has the right, provided he has not been called by his exchange to take the call, to alter not more than once the particulars of his booking, or to specify the time after which the booking is to be cancelled, or the period during which the call must not be set up without, however, changing the locality called. This option is given free except where the desired modification entails a second journey by the messenger. In this case the avis d'appel supplementary charge and, where applicable, the express charge, are collected a second time. The person booking an avis d'appel call has the right, when the avis d'appel has been transmitted over the international circuit, to change his booking into a booking of an ordinary call to the same local network. His booking keeps its turn and the caller must pay the avis d'appel supplementary charge.

* All other service indications concerning avis d'appel calls are similarly treated.

** Or, by the words "avis d'appel, express paid" (see § 1 above).

§ 3. — Avis d'appel calls are set up only if the controlling exchange has been informed that the called person is ready to take the call.

§ 4. — The procedure for setting up an avis d'appel call is as follows :

(a) The controlling operator when transmitting the avis d'appel to the distant exchange must state the approximate time after which the call could be set up. This indication is transmitted to the incoming exchange ;

(b) As soon as the called person (or his substitute) arrives at the public call office or states that he is ready to take the call at a subscriber's telephone which he indicates, the controlling exchange is advised immediately. If the " rapid service " method of operating is in force, this exchange has the call set up at once. If the " advance preparation " method of operation is in force, the call is set up as soon as its turn is reached * ;

(c) If the called exchange is advised that the called person (or his substitute) can be reached at a public call office or a subscriber's telephone in another locality, this information is transmitted to the caller and the original booking is cancelled. If the caller books a call to the other locality, it is treated as a new booking.

If the called exchange is informed that the called person (or his substitute) cannot or does not wish to take the call, the caller is informed as soon as possible, and the booking is cancelled ;

(d) If the called exchange is informed that the called person or his substitute will be unable to receive the call at the approximate time fixed for its establishment, the caller is notified accordingly. Moreover, as soon as the called exchange can state the time after which the called person (or his substitute) will be able to take the call, this time is advised to the caller.

In the case where the " advance preparation " method of operating is in force, if, after the time at which the called person is ready to take the call, the turn for setting up this call has not arrived, the booking takes its normal turn. It takes priority in front of all calls of the same class on hand, if its turn has already passed.

§ 5. — If after having arrived at the public call office, the called person (or his substitute) states that he can wait no longer for the call, the caller is notified and the booking is cancelled.

§ 6. — If the " advance preparation " method of operating is in force, at the beginning of the call immediately preceding the avis d'appel call, the originating and called exchanges should inform the calling and called stations respectively that the avis d'appel call can be set up within a few minutes and tell them that the persons concerned should hold themselves in readiness to take the call. At the time the call is actually being set up, the called exchange reminds the called station of the name of the called person ; thereafter the call is set up in the usual way. In addition to the supplementary charge in respect of the avis d'appel, the charge in

* In the case when the called person is to take the call at a subscriber's telephone, the regulations in respect of préavis calls are applied.

respect of the call is applied in accordance with the regulations governing the charges for calls without avis d'appel (RTf Articles 30 to 37 and Article 42).

§ 7. — The supplementary charge in respect of the avis d'appel and, where appropriate, the express charge, are not collected in the following cases :

(a) When, as a result of a fault of the service, the avis d'appel is not delivered correctly ;

(b) When, after delivery of the avis d'appel, the call has not taken place through some action of the telephone service ;

(c) When the caller cancels his booking before the originating international terminal exchange has transmitted the avis d'appel particulars over the international circuit.

If the caller cancels his booking of an avis d'appel call after the transmission of the avis d'appel particulars over the international circuit, the called exchange is informed of the cancellation. The called person is advised of this cancellation if he is in the public call office or if he arrives there later.

II. — PRÉAVIS CALLS

§ 1. — A préavis contains only the following details :

(a) Name of the caller and, where applicable, his telephone number ;

(b) Designation of the called person *, that is to say the particular person required or the station (main or extension) wanted ; the caller has the right to specify a second station in the same local network or another person either at the first or second station, if the required person is not available at the first number specified ; the caller has also the right to state that he wishes to speak with the person specified in the presence of an interpreter, or simply with a person speaking a specified language.

A préavis call may be booked on the day before that on which the call is to take place.

§ 2. — If the " rapid service " method of operating is in force, bookings of préavis calls are dealt with as follows :

The booking with all its particulars ** is at once transmitted by the controlling operator to the incoming operator who repeats it and takes the necessary action for its routing to the called exchange.

If the called person is ready to speak, the two subscribers are immediately put into communication by the controlling operator.

* If a recording operator or an operator receiving a booking of a préavis call considers that the designation of the called person is not sufficiently precise to permit this called person to be obtained without further requests for explanations, she should warn the caller that he will have to pay the préavis charge if the call cannot be set up because it has not been possible to identify the called person at the called station.

** The name of the caller and his telephone number (or only one of these particulars) are not transmitted unless the caller makes a request for this to be done.

If, at the called station, it is stated that the called person will only be able to speak after a certain time, the controlling operator, who is informed by the incoming operator, informs the caller either directly or through the intermediary of the operator who took the booking in the first place. At the specified time, the controlling operator arranges for the called person to be rung via the intermediary of the suspended call operator at the incoming exchange, and, having obtained him, recalls the caller.

If it is stated by the called station that no information can be given, the controlling operator, who is informed by the incoming operator, notifies the caller either directly or through the intermediary of the originating exchange.

Throughout the entire validity of the *préavis*, enquiry is made once an hour, except during the night, in accordance with the procedure employed in the country of destination, regarding the possible return of the called person, and the incoming operator is kept informed of the results of these attempts. When the called person is ready to receive the call, the incoming operator arranges for the caller to be re-rung through the intermediary of the appropriate suspended call position at the controlling exchange.

§ 3. — If the “ advance preparation ” method of operating is in force, the call bookings are dealt with as follows :

1. In principle, the particulars of the *préavis* are transmitted as quickly as possible to the called exchange and are indicated by the word *préavis* *. However, in the international services in which bookings are cleared with little delay, the international terminal exchanges concerned have the right to prescribe that *préavis* bookings should be classed as ordinary calls and that the particulars of the *préavis* are only to be transmitted to the called exchange when the turn for the call arrives.

2. *Préavis* calls are only set up in their turn if the controlling exchange (originating international terminal exchange in the case of a direct call ; international transit exchange in the case of a transit call) is advised that the called person is ready to take the call.

3. The procedure for setting up a *préavis* call is as follows :

(a) When the probable delay on the international circuit or circuits concerned is more than fifteen minutes, the caller is informed and the controlling operator must indicate the probable delay when transmitting the *préavis* to the called exchange ;

(b) The called exchange asks the station or stations concerned whether the called person will be ready to speak at the approximate time from which the call can be set up ;

(c) If, when receiving the *préavis*, the called station states that the called person is ready to take the call, the called exchange informs the controlling exchange immediately. The latter exchange sets up the call when its turn is reached.

* The name of the caller and his telephone number (or only one of the two particulars) are not transmitted unless the caller makes a request for this to be done.

4. If the called station states that the called person will be unable to take the call at the approximate time specified for its establishment, the caller is immediately advised accordingly. In addition, when the called station, at the request of the called exchange, can indicate the time from which the called person is able to take the call, this time is immediately notified to the caller.

If the called station, when first rung, is unable to give any information as to the time at which the called person will be available, the called exchange must enquire at least once an hour (night service excepted) regarding the possible return of the called person. As soon as the called exchange obtains this information, the caller is advised immediately.

5. If the turn for the establishment of the call has not been reached at the time from which the called person is ready to take the call, it retains its normal turn.

If the turn has already passed, the call is placed in front of any calls of the same category on hand.

6. When the call is being prepared, the operator at the called exchange rings the called station, confirms that the called person is ready to speak and sets up the call in the ordinary way.

If the *préavis* has been transmitted at the same time as the booking, after a delay of one minute the caller is advised that the called person cannot be found immediately, and that he will be re-rung.

Another attempt is then made, in the manner just described, as soon as the called person is ready to speak.

If the called station states that the called person cannot be reached, the caller is advised and, where appropriate, the calling exchange states the station or person who can replace the called person : an attempt to set up the call is made later.

§ 4. Arrangements common to both methods ("Advance preparation" and "Rapid service" operating) :

1. The person booking a *préavis* call has the right, provided that he has not been called by his exchange to take the call, to modify not more than once, the particulars of his booking or to specify the time after which the booking is to be cancelled, or the period during which the call must not be set up, without however changing the local network called. This facility is granted free of charge.

The person booking a *préavis* call has the right, when he is informed that the called person cannot be reached at the called station because that station does not exist or is out of order, to change his *préavis* booking into an *avis d'appel* booking to the same local system ; this facility is granted free of charge if the *avis d'appel* does not entail a journey by a messenger outside the free delivery area of telegrams ; in the contrary case, the caller is warned that he will have to pay the express charge.

2. If, when the call is set up, the called exchange is informed that the called person is at another station in the same locality, the call is dealt with as if it had been booked to this new station.

If the called exchange is informed that the required person is at a specified station in another locality of the same country, this information is given to the caller. If the caller wishes to speak with the called person in the other locality indicated, the first booking remains valid but is modified accordingly.

If the called exchange is informed that the called person cannot or does not wish to take the call, this information is given to the caller as soon as possible. The caller can then (if it has not already been done previously) either ask for another number or another person or ask for a call to the station indicated despite the absence of the called person. If he waives this option the booking is cancelled.

3. If there is no reply when the préavis is transmitted to the main called station, a second attempt is made a few minutes later ; if there is still no reply, a third attempt is made half an hour after the first. If this attempt is also unsuccessful, the caller is advised accordingly. If the caller asks for his booking to be kept in hand, the validity of the préavis is extended by 24 hours ; during this period the called exchange rings the called person at different times. When a reply is obtained, the foregoing provisions are applied.

4. If the préavis stipulates that an interpreter must be present with the called person during the call, this information is passed to the called person and no attempt is made to set up the call until the called station has indicated that this condition has been complied with.

If, at the actual moment the call is set up (or during the first minute after the call is set up), the main station states that it is prevented from taking the call because the called person cannot be reached at that particular instant, the caller is informed that his booking can be kept in during the period of validity of the préavis, unless he wishes to take the call despite the absence of the called person; if he refuses, the booking is cancelled and the préavis charge only is collected.

§ 5. — 1. The chargeable duration of a préavis call begins at the moment when the calling station is put into communication with the called person ; however this duration begins, at the latest, one minute after the moment when the calling and called stations, having previously been informed that the call is about to take place, and the called station having stated that the called person is ready to speak, the call is established between the stations concerned, and the two stations have replied to the ring.

The supplementary charge for the préavis is collected in addition to the charge in respect of the call.

2. The supplementary charge in respect of the préavis is not collected in the following cases :

(a) When, due to a fault of the service, the préavis has not been transmitted correctly ;

(b) When, after the receipt of the préavis, the call cannot take place because of some action of the telephone service ;

(c) When the caller cancels his booking before the originating international terminal exchange has transmitted the préavis.

If the caller cancels a préavis booking after the particulars have been passed over the international circuit, the called exchange is advised of the cancellation and this exchange passes the information on to the main called station, if the latter has received the préavis.

§ 6. — If there is no reply from either the calling or called persons, only the supplementary fee in respect of the préavis is collected ; this supplementary charge is collected even if it were not possible to pass the préavis to the called station because the latter did not reply (Article 49, § 7 of the RTf which provides for this case is an optional provision).

RECOMMENDATION No. 17 bis (New Recommendation)

Avis d'appel calls in frontier relations

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, in frontier relations, the value of one minute of ordinary conversation does not offset the costs incurred in sending a messenger to deliver the avis d'appel to the called person, especially since the Administration (or private operating Agency) in the country of destination receives only half of this charge for one minute of ordinary conversation,

Unanimously issues the recommendation :

That, subject to the provisions of Article 50, § 3, sub-§ 2 (No. 252), of the International Telephone Regulations (Paris Revision 1949), applicable to frontier relations, an avis d'appel call ought to be subject to an avis d'appel charge equal to a third of the charge appropriate to an ordinary call, exchanged during the charging period in which the avis d'appel was transmitted by the originating international terminal exchange, increased in frontier services by a fixed sum of 0.50 gold franc to the exclusive profit of the Administration (or of the private operating Agency) of the country of destination of the avis d'appel. This increase is intended to offset the costs involved in sending a messenger. Clearly, if the avis d'appel is delivered to an address beyond the limit of free delivery of telegrams, an extra express delivery charge would be levied, equal to the charge for an express delivery in the telegraph service ; this express charge, levied on the caller, is wholly placed to the credit of the Administration (or of the private operating Agency) of destination.

RECOMMENDATION No. 18

Stock Exchange calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 104*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 126 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 160*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the provisions of the International Telephone Regulations (Paris Revision, 1949) (Articles 20 and 44) relating to stock exchange calls, that is to calls to or from a stock exchange in which there are call offices, available to all members, operated by the Administration or private operating Agency of the country concerned and forming the "bureau-bourse", should be amplified ;

That, on the other hand, stock exchanges having call offices available to all members and not operated by the Administration or private operating agency of the country concerned (stock exchanges with private branch exchanges) must be treated as subscribers,

Unanimously issues the recommendation :

1. That in all institutions similar to stock exchanges (fairs, periodical exhibitions, etc.), the telephone installation should as far as possible be a private branch exchange, the calls from or to such institutions being subject to the normal regulations governing international telephony, the chargeable duration of the call beginning at the moment when the private branch exchange and its correspondent have replied to the ring (RTf., Article 30) and the person booking a call to such an institution always being advised at the time of booking, to make it a *préavis* call ;

2. That calls to or from a "bureau-bourse" (a group of call offices available to all members and operated by the Administration or private operating Agency of the country concerned) should provisionally be dealt with in accordance with the rules given below for the control of "stock exchange" calls ;

3. That it is desirable in future to standardise "bureaux-bourse" installations by applying the recommendations of the C.C.I.F. concerning the general conditions with which new "bureaux-bourse" installations must comply as regards the operating of international telephone circuits.

Instructions for the control of stock exchange calls

§ 1. — 1. Calls from or to call offices in a stock exchange available to all members but not operated by the Telephone Administration (or private operating Agency) are subject to the general rules of international telephony.

2. Administrations or private operating Agencies concerned advise to each other the official names of stock exchanges which have a “bureau-bourse” and, if they think it necessary, the days and hours of working of these “bureaux-bourse”.

§ 2. — 1. In a booking from or to a “bureau-bourse” the name of the stock exchange and the name of the calling or called member are given.

Example. — (a) Amsterdam commercial stock exchange. P. Jansen calling Paris Littré 2430.

(b) Paris Littré 1893 calling Amsterdam commercial stock exchange, Dunlop and Company.

(c) Amsterdam commercial stock exchange. P. Jansen calling Paris “bourse des valeurs”, Lebrun, Banque Nationale Crédit.

2. Calls to a “bureau-bourse” during the working hours of this exchange are transmitted to the “bureau-bourse” as quickly as possible.

Outside these hours, the transmission is carried out by agreement between the exchanges concerned.

3. After the receipt of a booking, the called “bureau-bourse” should ascertain, making several attempts if necessary, whether the member called is available, and advises him that he has been called (preliminary advice). If this member accepts the call he is advised later when his turn will arrive (final advice). If the preliminary advice has not reached the member concerned within a reasonable time or if he does not accept the call the controlling exchange is informed. In the first case the establishment of the call is deferred ; in the second case, the booking is cancelled.

§ 3. — 1. Before the beginning of the call preceding that exchanged with the “bureau-bourse”, the trunk exchange advises the “bureau-bourse” that the call is about to be set up. The “bureau-bourse” advises the member (calling or called) as quickly as possible that his turn is about to be reached, informing him of the call office to be used for his call.

2. Before receiving the final advice, the member can ask for the call to be established with another station in the same local exchange area.

§ 4. — 1. The charge applied to a stock exchange call is equal to that in respect of a call of the same class and duration. Provided that the called member is always advised in advance that he is about to be called to the telephone, the charge for a stock exchange call becomes payable from the moment when the call is at the disposal of the member called.

2. If the called member does not arrive in time, or if he does not appear at all, the call is held at his disposal for three minutes from the moment the charge becomes payable.

However, the caller may stipulate that the call be held for a maximum of six minutes, paying the charge for the time the call has been held at his disposal, with a minimum of three minutes.

RECOMMENDATION No. 19

Collect calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 106*;
Yellow Book, *Volume Ibis, XVth P.A., Paris, 1949, p. 128*, and
Yellow Book, *Volume Iter, XVIth P.A., Florence, 1951, p. 162*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, in general, when a collect call is booked, it is because an agreement (of a general nature) has been reached between the caller and the called person whereby the latter (usually the commercial firm to which the caller belongs) pays the cost of telephone calls ; the caller requiring a collect call making the booking as an ordinary, urgent or lightning call according to its urgency ;

Unanimously issues the recommendation :

1. That, by agreement between the Administrations and/or private operating agencies concerned, collect calls (International Telephone Regulations (Paris Revision, 1949), Article 19) shall be admitted for ordinary as well as for urgent and lightning calls.

(2) That, in the services in which collect calls are admitted (RTf, Article 19) the Administrations and/or private operating agencies concerned should agree to adopt the following procedure in the special cases provided for below :

If a collect call is exchanged at a time when the periods of charge (heavy and light traffic) are different in the originating country and the country of destination the charge should be calculated according to the tariff in force in the country of the subscriber paying the charge at the legal time at which the call has been established in that country.

If the booking has not been followed by a conversation, the supplementary charge is calculated on the tariff in force in the originating country from which the booking has been transmitted at the legal time of that country.

In all cases where a collect call, not accompanied by an avis d'appel or a préavis, does not mature, provided that this is not due to a fault of the telephone service (in particular when the called subscriber refuses to pay for the call), the originating exchange collects from the caller a supplementary charge equal to the charge for one minute of ordinary conversation exchanged during the period of charge of the originating country from which the booking was transmitted (RTf, Article 43, § 2).

If the original booking for a collect call is changed into a booking for a préavis collect call, before the called person has been rung by his exchange to exchange conversation, and the called person refuses to pay the charge whereupon the caller cancels the booking, the caller should pay only the supplementary charge in respect of the préavis, calculated in accordance with the tariff in force in the originating country at the legal time of this country when the préavis booking was transmitted.

Considering moreover,

That, in accordance with the International Telephone Regulations (Paris Revision, 1949), a collect call can be accompanied by an avis d'appel ;

That it is desirable, however, to avoid the difficulties which could occur at the time of payment of the charge,

Unanimously issues the recommendation :

1. That the outgoing operator should first of all confirm that the caller guarantees the payment of the avis d'appel charge and, if necessary, the express charge if the called person refuses to pay ; she must also inform him that if he does not agree to pay the charge for the call plus the avis d'appel charge and, if necessary, the express charge, the call cannot take place.

2. That, when the messenger delivers the avis d'appel to the called person, he must inform the called person that he must pay the call charge together with the avis d'appel charge and possibly the express charge ; if the called person refuses the originating operator must be informed.

RECOMMENDATION No. 20

Requests for information

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 107 ;*
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 129 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 163)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation

That the provisions of the International Telephone Regulations (Paris Revision, 1949) (Articles 21 and 45) should be amplified as follows :

1. Each time a subscriber makes a request in order to find out :

(a) whether a given person designated by name and any other particulars necessary to identify him (for example his full address) is a telephone subscriber ;

(b) the name of the person to whom a particular telephone number is allotted ;

the operator should invite the subscriber making the request to place a booking at the same time if he intends to make a call. If the subscriber books a call the information he requires is supplied free of charge. If the subscriber does not book a call, his request is considered as a " request for information " and is charged for as appropriate (see RTf, Article 45) ;

2. Requests for information are transmitted from exchange to exchange as quickly as possible. In no case are circuits interconnected for the transmission of these requests.

Examples of requests for information.

A. *Request.* — Paris Central 0999 asks if M. X. ... 161, Boulevard Anspach, Brussels, is a telephone subscriber.

Reply. — Reply for Paris Central 0999 : Mr. X. ... Brussels 26236, Mr. X. ... is not a subscriber, or Mr. X. ... is not shown in the directory.

B. *Request.* — Paris Central 0999 requests name and address of London City 5396.

Reply. — Reply for Paris Central 0999 : City 5396 is Green, H. R., Commission Agent, 3, Broadway, London, E.C.4, or City 5396 is not shown in the telephone directory.

RECOMMENDATION No. 20 bis

Epidemiological calls

(Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 164)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering the request of the World Health Organization regarding extremely urgent epidemiological telephone calls and Resolution No. 227 adopted by the Administrative Council of the International Telecommunication Union at its 6th Session (April/May 1951),

Unanimously issues the recommendation :

That exceptionally urgent telephone calls booked by the Headquarters of the World Health Organization (or by the Regional Centres of this Organization) should be given the same treatment as that given to distress calls under the pro-

visions of Article 36 of the International Telecommunication Convention, Buenos Aires, 1952. However, this priority relating to distress calls should only be given to epidemiological telephone calls in the following cases :

1. The notification of the appearance of one of the quarantinable epidemic diseases to the health authorities of the countries immediately menaced by this appearance, when a telegraph notification could not reach them in time ;
2. The advice to these health authorities in the countries menaced of the preventive measures which should be put in force by them, and
3. The notification, of a case of quarantinable epidemic disease on board an aeroplane or a ship to its point of destination.

RECOMMENDATION No. 21

Lease of international communication channels for private service

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 108 ;*
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 130 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 165*)

I. — CONDITIONS OF ADMISSION

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, in several services, circuits are available in the international cables ;

That, although the leasing of circuits has not previously been permitted in the international services, several Administrations and private operating Agencies already have experience of leasing circuits in their internal services ;

That several Administrations and private operating Agencies have already received requests for the lease of international telephone circuits, for private services ;

That consequently there is a need to give consideration to the possible lease of international telephone communication channels in such a way as to permit Administrations and private operating Agencies to organise this new service on comparable bases ;

That it is desirable, however, to ensure that the nature of this leasing should not be such as to interfere with the service in general or to be open to abuse by the subscribers renting the circuits,

Unanimously issues the recommendation :

That the Administrations and private operating Agencies who permit the full time leasing of international telephone communication channels should provisionally be guided by the following principles until such time as it is possible to profit by practical experience in this question :

1. An international telephone communication channel in a given service will be leased only if the number of circuits in the service is adequate.

2. The leasing of an international telephone communication channel having been agreed, the connection will be established once and for all in such a way that the telephone exchanges no longer have to intervene, but the technical arrangements should be such that the operating personnel are able (by means of appropriate switchings made at their request) to effect control of the calls exchanged over the leased circuit.

The stations connected in this way should in no circumstances be stations normally available to the public.

The calls exchanged must be concerned exclusively with the personal affairs of the subscribers or those of their firms. The line may in no way be made available to third parties.

It is desirable that the leased circuits should terminate at the subscribers' premises at installations which prevent these circuits being used under conditions other than those laid down in the leasing agreement.

3. In principle, the lease should be for a minimum of one month ; however, by agreement between Administrations and/or private operating Agencies concerned, the lease may be for a period of less than one month. The lease is renewable month by month by implication, the notice of cancellation on either side to be given two weeks before the end of the current period of lease.

4. Administrations and private operating Agencies reserve the right to take back the leased communication channel if it is in the interest of the general service to do so, the appropriate notice being given as mentioned in § 3.

5. The rental is payable monthly in advance.

6. In the case of interruption due to a fault of the telephone service, the Administration or private operating agency of origin grants a rebate at the request of the renter. The rebate is calculated in accordance with the provisions of Part II (Charging) below. If the duration of the interruption is less than a day, no rebate is made. The period between 9 a.m. and 3 p.m. counts as one day in this connexion.

II. — CHARGING

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the leasing of an international telephone communication channel enables the renters to obtain a call without delay at any time, having in consequence the character of a lightning call, and being for the renters a very important privilege :

That, however, the fact that the operating personnel of the Administrations and private operating Agencies do not have to assist in the establishment of calls, should be taken into account,

Unanimously issues the recommendation :

1. That the rental for an international telephone communication channel should correspond to 6,000 minutes of ordinary conversation, during the period of heavy traffic, on the service concerned, per month. If an interruption occurs, due to the fault of the telephone service, and lasts for at least one day, the rebate should correspond to 200 minutes of conversation per day of interruption.

2. That in all cases, even in the case of frontier services, the receipts from rentals should be included in the international accounts.

3. That in the case of a lease for a period of 10 days or less, the rental should be 80 units per day, or 240 ordinary call minutes in the service concerned in the period of heavy traffic, per day of lease, plus a surcharge corresponding to 10 units or 30 ordinary call minutes in the period of heavy traffic, irrespective of the duration of leasing.

4. That in the case of a lease for periods exceeding 10 days and up to 25 days, the charge should be 80 units per day, or 240 minutes of ordinary conversation in the service concerned in the period of heavy traffic, per day of lease, no surcharge being collected in this case (Thus for 11 days the charge to be applied would be $11 \times 240 = 2640$ minutes).

5. That in the case where the lease is extended beyond the 25th day up to the end of the month, the charge will be fixed uniformly at 2,000 units, or 6,000 ordinary conversation minutes in the service concerned in the period of heavy traffic.

6. That in the case of a lease for a period exceeding one month, the charge for the first month should be that indicated above and the charge for each additional day should be 200 ordinary conversation minutes in the service concerned in the period of heavy traffic.

RECOMMENDATION No. 21 bis (New Recommendation)

Simultaneous use of leased telephone circuits for telegraphy and telephony*

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That Recommendation B.19 of the International Telegraph Consultative Committee refers only to the case where the leased telephone circuit is used for *alternate* telegraphy and telephony,

* This text is the same as that of draft Recommendation H.13 of the International Telegraph Consultative Committee (C.C.I.T.).

That the use of simultaneous telegraphy and telephony over a leased telephone circuit can give rise to significant disturbances if technical precautions which are difficult to arrange are not taken.

That the tariff for the lease of a telephone circuit used in this manner necessitates a more extensive study by the competent Study Groups of the C.C.I.T. and C.C.I.F.

Unanimously issues the recommendation :

1. That it is not desirable in present circumstances to permit the use of leased telephone circuits for *simultaneous* telegraphy and telephony.
2. That it is not desirable to permit the user of a leased telephone circuit to employ this for the purpose of establishing several telegraph circuits for simultaneous use.
3. That if, exceptionally, authorization were given for the uses envisaged in §§ 1 and 2 above, the rental should not be lower than the sum of the rentals for the various channels of communication considered separately.
4. That for such exceptional use, the technical arrangements should ensure that no disturbance is caused to the telegraph and telephone services.

RECOMMENDATION No. 22

Conference calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 110*;
Yellow Book, *Volume Ibis, XVth, P.A., Paris, 1949, p. 132 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence, 1951, p. 168*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

The information supplied by different Administrations and private operating Agencies about conference call facilities already admitted in their respective countries,

Unanimously issues the recommendation :

That the principle of conference calls should be retained and that they should be admitted in the international service, by agreement between the Administrations and private operating Agencies concerned, provided that the technical installations fulfil the conditions necessary to ensure good transmission in all cases. In this connexion, it is desirable to consider :

(a) the case where the subscribers grouped belong to two local systems only ;

(b) the case where the conference call involves more than two local systems.

Note. — On this point see the C.C.I.F. Recommendation entitled “ Conditions governing the admission of conference calls ” which contains provisional instructions for the establishment and supervision of conference calls (*Green Book, 1954, Volume IV, Section 2.3.3*). See also Recommendation No. 44 entitled “ Charging for conference calls ”.

RECOMMENDATION No. 23 (New Recommendation)

(replacing former Recommendation No. 23 “ *Use of carrier current international telephone connexions on industrial power lines* ”. Yellow Book, volume I bis, XVth P.A., Paris, 1949, p. 132 and Yellow Book, volume I ter, XVIth P.A., Florence, 1951, p. 168)

Utilisation, by public services, of international telephone connexions which are their property

(This Recommendation applies to international telephone connexions set up by undertakings for the generation and distribution of electric power and to international telephone connexions set up on railway property, provided that these telephone connexions are constructed and operated by the public services concerned.)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That private international telephone connexions can be indispensable to certain public services (the term “ public service ” includes not only state services but also organisations providing services of general interest, such as those generating and distributing electric power, etc.) ;

That, nevertheless, these international telephone connexions permit the exchange of conversations outside the general public telephone service, which constitutes a certain privilege ;

That in consequence this justifies some control of the use made of these circuits and also requests for compensation,

Unanimously issues the recommendation :

That Administrations and/or private operating Agencies which authorise the establishment and use of private international telephone connexions for a public service (connexions set up and operated by the public service) should be guided by the following principles :

1. The use of private international telephone connexions should be made the subject of an agreement between the proprietors of the different sections of the connexions for the one part, and between the Administrations and/or private operating Agencies of the countries over the territories of which the sections are constructed, for the other part.

2. The public services authorised to use these private international telephone connexions should agree to exchange over them only messages relating exclusively to their business and never to permit them to be used by third parties.

3. Technical limitations (prescriptions relating to the installations, authorised types of apparatus) should be imposed in order to prevent such international telephone connexions obtaining access (directly or indirectly) to the lines and circuits of the general telephone network.

4. The Administrations and/or private operating Agencies concerned reserve the right to exercise, by any suitable means, all technical or other controls which they consider to be useful.

5. The Administrations and/or private operating Agencies concerned always reserve the right to withdraw the authority to use such connexions if abuses occur or if a superior interest justifies it.

6. In order to compensate to some extent the loss of revenue (for the Administrations and private operating Agencies) resulting from the privilege granted to the users of such private international telephone connexions, the Administrations and/or the private operating Agencies concerned will charge a minimum annuity of 12 gold francs per kilometre of circuit used on their own territory, the payment of this annuity falling upon the proprietors of the circuits used. Each Administration will itself determine the length of the circuits to be taken into consideration, taking account of the point where the circuit crosses the frontier and the point or points from which the circuit(s) can be used.

Note. — In the event of a case occurring of a group of circuits constituting a veritable telephone network over an extensive territory, to meet the needs of a particular public service, it is desirable that this service should send to all the Administrations and/or private operating Agencies concerned, a plan of the network showing the various centres of activity of this public service and the telephone switching centres.

RECOMMENDATION No. 24

Modifications of bookings at the request of the caller

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 111*;
Yellow Book, *Volume Ibis, XVth P.A., Paris, 1949, p. 134 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence, 1951, p. 170*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That Article 26 of the International Telephone Regulations (Paris Revision, 1949) lists the modifications which may be made to the booking for an international telephone call by the caller, so long as he has not been summoned by his exchange to take the call, but does not specify how the modifications should be dealt with from the operating point of view,

Unanimously issues the recommendation :

That it is desirable to interpret certain provisions of Article 26 of the International Telephone Regulations concerning the order of establishment of calls, as follows :

1. In the case where the caller stipulates that the call should not be set up during a specified period, if the turn for establishment of the call is reached during this period, the end of the specified period is considered to be the booking time of the call ;

2. In the case where the caller specifies that the call is not to be set up until after a particular time on the same day, the time originally recorded as the booking time is replaced by the new time indicated ;

3. In the case where the caller changes a booking of an ordinary (or an urgent) call into a booking for an urgent (or a lightning) call, the time at which the change is made is considered as the new booking time of the call ;

4. By an extension of the provisions of the International Telephone Regulations which allow the changing of a booking of an ordinary call into a booking of an avis d'appel (or préavis) call, the person booking an avis d'appel (or préavis) call has the right, when the avis d'appel (or préavis) particulars have been transmitted over the international circuit, to change his booking into a booking without avis d'appel (or préavis) to the same local network ; the booking retains its turn and the caller must pay the supplementary charge in respect of the avis d'appel (or préavis) because the international terminal exchange has already transmitted the particulars of the avis d'appel or the préavis over the international circuit.

5. By an extension of the provisions of the International Telephone Regulations a person booking a préavis or an avis d'appel call, or a stock exchange call has the right, after the booking has been passed to the international terminal exchange concerned, to modify, not more than once, the designation of the called person, without however changing the local network called.

RECOMMENDATION No. 25

Transmission of bookings under the "advance preparation" method of operating

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 112;*
Yellow Book, *Volume Ibis, XVth P.A., Paris, 1949, p. 135 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence, 1951, p. 171*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to amplify the provisions of the International Telephone Regulations (Paris Revision, 1949) (Article 28, § 1),

Unanimously issues the recommendation :

That, if traffic is sufficiently heavy, bookings of calls should be transmitted between international terminal exchanges in such a way that, in addition to the call in progress, each international terminal exchange should have on hand at least two incoming bookings per circuit.

C. OPERATING METHODS

RECOMMENDATION No. 26

Operation of international circuits

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 113*;
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 135 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 172*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is very desirable to unify as much as possible the rules for the use of international telephone circuits, in order to facilitate the work of the personnel using them, in the interest of efficient operation,

Unanimously issues the recommendation :

That Administrations and private operating Agencies recommend operators to conform with the provisions of the " Instructions for operators in the European international telephone service " prepared and periodically revised by the 6th and 7th Study Groups of the C.C.I.F.

These instructions envisage two operating methods :

1. Advance preparation of calls.
2. The " rapid telephone service " (which itself comprises three variants : indirect manual service, direct manual service, semi-automatic service).

In general it is desirable to employ the " rapid service " whenever possible. Nevertheless at certain times in certain services—or permanently in other services—the number of circuits become (or are normally) insufficient to carry the volume of traffic by the rapid service method. In such cases, recourse is had to advance preparation operating.

For changing from rapid to advance preparation operating,

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, in an international rapid telephone service each operator should have direct access to all the national trunk (interurban) circuits,

That, in advance preparation operating, the circuits should be divided into small groups of two or three at most, each of these groups being handled by a special operator,

That, in the corresponding exchanges, it is desirable that the agreed division of circuits between them should be such as to facilitate the transmission of service conversations and the preliminary operating work for the setting up of calls,

Unanimously issues the recommendation :

1. That when the volume of traffic entails abandonment of the rapid service, the revised division of the circuits should be the subject of agreement between the Supervisors concerned at the corresponding international terminal exchanges ;

2. That the number of positions used in these exchanges as well as the equipment of these exchanges should be planned so as to permit the abovementioned division of circuits ;

3. That, in the case of manual operation employing positions over which the circuits are multiplied, it is unnecessary to take special measures for passing rapidly, if necessary, from rapid to advance preparation operating, or vice-versa.

RECOMMENDATION No. 26 bis (New Recommendation)

Numbering plan for the international semi-automatic telephone service

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

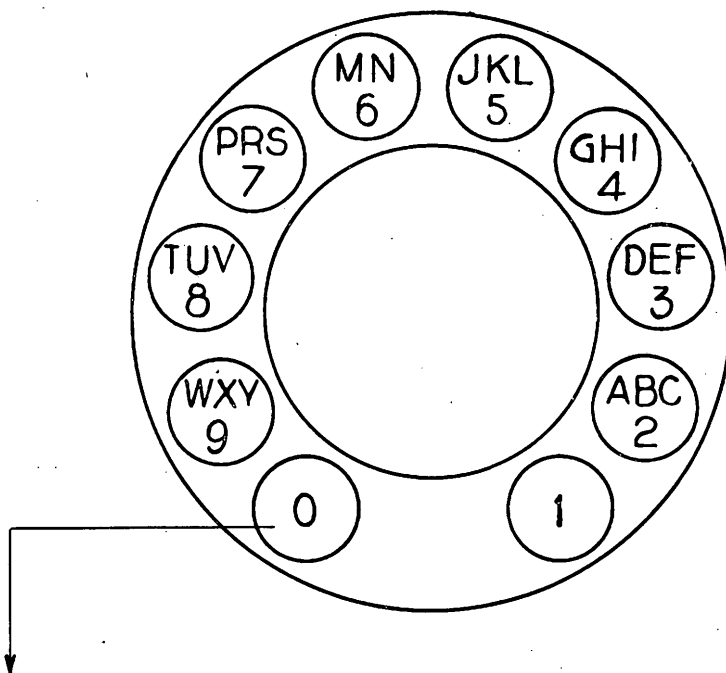
Unanimously issues the recommendation :

That, in order to facilitate the development of trunk switching in Europe, Administrations and private operating Agencies in Europe adopt the following directives :

Directives for subscribers' numbering schemes and the routing of calls in semi-automatic operation

To facilitate the development of automatic trunk switching, each Administration or private telephone operating Company should consider very carefully the establishment, for its own network, of a *national numbering plan*. This plan should be designed so that a subscriber is always called by the same number in the trunk service. This numbering plan should apply without exception to all incoming international calls, but it may be modified as judged to be useful for the national service, for example for the traffic between neighbouring towns or regions.

ILLUSTRATION OF A SUBSCRIBER'S DIAL COMPRISING THE ASSOCIATION OF LETTERS
AND FIGURES MOST GENERALLY USED IN EUROPE



Remark. — On the subscribers' dials used by the British Administration the single letter "O" is associated with the figure "0". On the subscribers' dials used by the French Administration the figure "0" is associated with the two letters "O" and "Q".

If an Administration or private telephone operating Company of a country using the Latin alphabet intends to use letters in its national numbering scheme, it would be desirable to use dials (or key sets) which employ one of the associations of letters and figures most generally used in Europe and corresponding to the illustration above.

The adoption of this standard association of figures and letters will facilitate the work of operators in the international semi-automatic service. Otherwise it will be necessary for international operators (or subscribers wishing to book an international call) to have the means of knowing, for example by means of a list of translations, the figure corresponding to each letter in the telephone number of the called subscriber.

The employment of a standard list of numerical codes (established on a decimal basis) corresponding to the different countries concerned, is recommended for international semi-automatic operation. These *international codes* could in fact be used generally in semi-automatic working when the operators have switch access to the international circuits; they could also be used in the case of fully automatic operation (subscriber to subscriber), were this introduced in certain international relations by agreement between the interested administrations.

In principle, a single international code will be assigned to each country in Europe ; but certain European countries, because of their size, could need two or more than two international codes. At the same time, a certain number of codes called " special codes " should be reserved. These special codes will be used to enable certain traffic (in particular between adjacent countries) to be routed by the most economical route, in the case where operators have switch access to international circuits. They should serve solely for the routing of traffic over direct routes between two countries and will be used by agreement between the countries concerned. With these codes limited to two digits, the number of codes which remain free for this purpose is in fact largely sufficient to meet all the needs in Europe.

According to this recommendation, in order to set up a call from country A to a second country B which has more than one international terminal exchange connected by direct circuits with country A, the operator will be able when she has selector access to the circuits to determine from the digits given by the calling subscriber and, if necessary, from a routing file, the international code for the most economical routing. She will also be able to determine, if it is desired, the code of the most appropriate alternative route if the primary route is busy and alternative routing is not automatic.

These special codes being used solely for the routing of traffic over direct routes between two countries, it could be arranged for all calls destined for country B routed in transit across country A to be carried over only one of the possible routes, but this is not considered to be of importance, in view of the low volume of such traffic.

Moreover, it can be foreseen that in the future certain Administrations may wish to use automatic equipment in order to avoid the necessity for operators to choose the route to be taken in the case quoted, as well as for choosing the most economical routes, even for transit traffic. With a view to reducing the complication of the automatic equipment, it is recommended that whenever possible Administrations establish their national numbering plans so that most economical routing of traffic destined to these countries from other countries can be determined by means of the first, or if this is not possible the first two, digits of the subscribers' national number.

The first, or the two first digits of the national number mentioned above, are those which indicate the zone to which the call is destined and in order to avoid all ambiguity, it is desirable to consider as *not forming part* of the national number the prefix (" 0 " in certain countries for example) which, for national automatic calls, indicates that a call must leave one national numbering zone in order to be routed to another national numbering zone.

The list of international codes to be used is given below.

LIST OF INTERNATIONAL CODES AND SPECIAL CODES FOR THE ROUTING OF INTERNATIONAL TRAFFIC IN SEMI-AUTOMATIC OPERATION IN EUROPE AND IN THE MEDITERRANEAN BASIN

1. — Numerical List

A. *Special codes*

00 to 19

B. *International Codes*

20	Poland	48	Morocco (French Protectorate)
21	Algeria	49	Germany
22	Belgium	50	Spain
23	Austria	51	Morocco (Spanish Zone)
24	—	52	Ireland
25	Finland	53	—
26	Arabia	54	Syria
27	Cyprus	55	Netherlands
28	Bulgaria	56	—
29	Gibraltar	57	Czechoslovakia
30	Greece	58	—
31	Egypt	59	Albania
32	—	60	Luxembourg
33	France	61	Denmark
34	Israel	62	Tunisia
35	Hungary	63	Yugoslavia
36	Turkey	64	Iceland
37	Lebanon	65	—
38	Norway	66	Switzerland
39	Italy	67	—
40	Libya	68 to 79	{ Russia (European Republics)
41	Jordan	80 to 98	{ Spare codes (in addition to the codes 24, 32, 45, 53, 56, 58, 65, 67)
42	Portugal	90 to 99	<i>Intercontinental traffic</i>
43	Malta		
44	Great Britain		
45	—		
46	Sweden		
47	Roumania		

2. — Geographical List of International Codes

I. — *Western Europe*

Belgium	22
Luxembourg	60
France	33
Great Britain	44
Ireland	52
Spain	50
Portugal	42
Gibraltar	29

II. — *Northern Europe*

Denmark	61
Finland	25
Norway	38
Netherlands	55
Sweden	46
Iceland	64

III. — *Central Europe*

Austria	23
Hungary	35
Italy	39
Germany	49
Switzerland	66
Czechoslovakia	57
Poland	20

IV. — *Balkans and Oriental Europe*

Albania	59
Bulgaria	28
Greece	30
Roumania	47
Yugoslavia	63
Turkey	36
Russia	{ 68 and 69
(European Republics)	{ 70 to 79

V. *Countries in the Mediterranean Basin*

Algeria	21	Libya	40
Arabia	26	Malta	43
Cyprus	27	Morocco (French Protectorate)	48
Egypt	31	Morocco (Spanish Zone)	51
Israel	34	Syria	54
Jordan	41	Tunisia	62
Lebanon	37		

VI. — *Spare Codes*

VII. — *Intercontinental traffic*

24, 32, 45, 53, 56, 58, 65, 67 and 80 to 89.

| Codes in the series 90 to 99.

RECOMMENDATION No. 26 ter (New Recommendation)

Code for access to the international network

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the standardization of a code for access to the international network would be of use only to the small number of persons who, when travelling abroad would wish to dial a number (under fully automatic conditions) without the assistance of a local inhabitant of the country,

That no definite proposal to reserve an international code for access to the international network can be made without disturbing national numbering plans already established,

Unanimously issues the recommendation :

That a code for access to the international network should not be standardized for the purposes of a fully automatic service (subscriber to subscriber).

RECOMMENDATION No. 27

**Assignment of a serial number to each booking of a call
in advance preparation operating**

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 114;*
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 137 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 173*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the use of a serial number assigned to each call booking can facilitate verification of call particulars, the progress of calls and the daily check of calls exchanged,

Unanimously issues the recommendation,

1. That, by agreement between the Administrations and private operating Agencies concerned, a serial number can be assigned to a call booking by the outgoing international terminal exchange at the moment when the call is announced to the incoming international terminal exchange ;

2. That even numbers should be reserved for calls in one direction and odd numbers for calls in the other direction ;

3. That the numbering should commence at 0000 hours or, when appropriate, at the opening of the daily service ;

4. That, if the circuits connecting two localities are divided over several positions, each position should have its separate series of numbers ;

5. That the bookings passed through a transit exchange receive at this exchange, in addition to the number already assigned by the outgoing international exchange, a second serial number assigned by the transit exchange.

RECOMMENDATION No. 28

Enunciation of subscribers' numbers

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 115 ;*
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 137 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 174*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, when operators use a foreign language it is more easy to enunciate figures than numbers,

Unanimously issues the recommendation,

That, on international circuits, subscribers' numbers should be quoted by successively repeating the figures of which they are composed if there are any difficulties in quoting these numbers.

RECOMMENDATION No. 29

Directives for the equalization of delay in both directions, in the case of advance preparation operating

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 115 ;*
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 138 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 174*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That experiments made with a view to equalizing the delays in both directions have given good results,

Unanimously issues the recommendation :

That, when the delay on an international direct * route exceeds the maximum limits envisaged by the C.C.I.F. (Recommendation No. 3), or the limits fixed by a common agreement between the Administration or private operating Agencies concerned, endeavour is made :

1. To equalize the delay in both directions in accordance with the following directives ;

2. If this measure does not suffice (or seems unlikely to suffice), to use one or more less congested auxiliary routes concurrently with the normal route.

Directives. — If the delay to ordinary calls on a direct * international route, at one of the international terminal exchanges served by that route, exceeds the maxima envisaged in C.C.I.F. Recommendation No. 3 (that is to say : thirty minutes for circuits up to 500 kilometres in length, sixty minutes for circuits over 500 kilometres in length), and if this international terminal exchange has reason to suppose that the difference in the delay in both directions is more than half-an-hour, it should ascertain from the distant international terminal exchange the actual extent of the delay at that exchange. If the difference in the delay is greater than half-an-hour, the exchange where the delay is longest will decide, in agreement with the other exchange :

(a) when the circuits are used alternately, to pass two or three outgoing calls for one incoming call, until the delay is about the same in both directions ;

(b) when the circuits are divided into outgoing and incoming unidirectional circuits, to use an incoming circuit for outgoing calls until the delay is approximately equalized in both directions.

An international terminal exchange is required to give information about delay to the corresponding distant exchange which asks for it, by quoting the extent of its own delay.

The following phrases will be used for the purpose.:

- The delay here is x minutes ; what is yours ?
- Modification of alternate use : two outgoing for one incoming (or three outgoing for one incoming) ;
- Modification of circuit allocation : circuit No. . . . outgoing from . . .

RECOMMENDATION No. 30

Division of circuits into outgoing, incoming and bothway groups

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 116 ;*
Yellow Book, *Volume Ibis, XVth P.A., Paris 1949, p. 139 and*
Yellow Book, *Volume Iter, XVIth P.A., Florence 1951, p. 176*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the division of circuits into outgoing, incoming and bothway components affords economy in terminal exchange equipment, economy which increases with the size of the route ;

* Account should be taken only of delays to bookings of calls between two countries connected by a direct route.

That this division must be constantly adapted to the distribution of the traffic in the two directions over the group considered ;

That such adaptation can be particularly difficult for small groups of circuits, but that, by an instruction prescribing the choice of circuits by operators in an inverse order at the two extremities of the group, a practical result equivalent to divided working can be obtained,

Unanimously issues the recommendation :

That the division of circuits in all large groups comprising at least eight circuits should be examined ;

That, for smaller groups, it can be advantageous to instruct operators to choose the circuits in an inverse order at the two extremities of the group.

RECOMMENDATION No. 31

Telegraphic preparation of telephone calls

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 117 ;*
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 140 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 176*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable, particularly during the period of heavy traffic, to reduce as much as possible the time for which a telephone circuit is occupied by service transactions ;

And that good results have been obtained in the internal services of different Administrations and recognised private operating Agencies with the telegraphic preparation of telephone calls,

Unanimously issues the recommendation :

That, in services where advance preparation operating is the general rule, this preparation should be effected by telegraphy whenever it is technically possible, in so far as this is of value for circuit exploitation.

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering, however,

That it is indispensable to draw up common rules to be followed in the telegraphic preparation of international telephone calls in order to achieve the best possible efficiency.

Unanimously issues the recommendation,

That Administrations and private operating Agencies conform, in this matter, with the following directives :

Directives for the telegraphic preparation of international telephone calls

Definition and object. — Telegraphic preparation of telephone calls—by means of teleprinter apparatus—consists of the use of a telegraph service constituted by the equipment of a circuit between two telephone exchanges, preferably unuseable for telephony (for example a double phantom circuit), for the telegraphic exchange of all service particulars relating to the preparation of telephone calls which must be routed over the circuits connecting these exchanges.

Telegraphic preparation tends, in consequence, to augment the efficiency of the circuits because they are relieved of service conversations. This is particularly evident in the operation of circuits with heavy traffic. In no circumstances should the use of a line for a telegraphic order-wire be detrimental to the telephone circuits. If, at a given time, the telegraph signals cause a disturbance in the telephone circuit the telegraphic preparation is provisionally suspended.

Selection of operating personnel. — The telegraphic preparation of calls by teleprinter is entrusted, at both ends, to a special operator fully conversant with the instructions concerning the international telephone service and trained in teleprinter keying. This operator takes no part in the setting up of telephone calls while she is responsible for the telegraphic preparation of calls.

Conventional abbreviations. — With a view to ensuring rapid telegraphic transmission of the various service transactions and avoiding difficulties resulting from the presence on the line of two operators speaking different languages, use is made of a code of international abbreviations comprising the expressions most frequently used in telephony.

Following direct agreement between the exchanges concerned, this code of abbreviations which is reproduced below, can be completed by a series of abbreviations for use between these exchanges to designate localities or the larger exchanges :

Ordinary private call	P
Urgent private call	D
Service call	A
Urgent service call	AD
Ordinary Government call	S
Urgent Government call	SD
"Lightning" call	ER
Subscription call	AB
Occasional fixed time call	F
Collect call	PAY
Agreement of duration	C
Check of call particulars	TC
Interrupted call	IT
Request for information	DR
Difficult	DIF
Ineffective (cancellation because of defective transmission)	IF
Put aside	ZL
No reply	N
Cancelled	AL

<i>Avis d'appel</i>	M
Address (of a subscriber)	ARD
Subscriber has replied	AR
To be prepared	AP
To be changed	TRF
Stock Exchange	B
Telephone exchange	BU
Public call office	BP
Telephone circuit	CT
Engaged	O
Not a subscriber	NP
<i>Préavis</i>	V
Refusal	RF
Nothing for me ?	?
Nothing	R
Ring	SR
Come into circuit No. X again	RZX
Faulty	HS
Error	XXX

Numbering of call bookings. — Call bookings exchanged between two exchanges receive a serial number which is determined by the outgoing international terminal exchange when it passes the booking to the incoming international terminal exchange. Even numbers are reserved for calls in one direction and odd numbers are reserved for calls in the opposite direction. The numbering commences each morning at the opening of service for the day.

Subsequently, the two operators refer to the calls only by their serial numbers.

If the circuits connecting two localities are distributed over several operators' positions, each position has its own serial numbers.

Transmission of bookings of calls. — The call bookings are transmitted while calls are being exchanged over the telephone circuits, when the presence of the operators on the line is no longer necessary.

The exchanges concerned transmit their bookings alternately so that, in addition to the call in progress, each exchange has at least two call bookings in hand per circuit in each direction.

If one of the two exchanges has no call booking on hand, it sends the signal " R " (nothing). The other exchange can then transmit further call bookings. If the signal " R " has not been transmitted, the exchange should be recalled with the interrogation signal (?).

The use of abbreviations is obligatory in the transmission of call bookings or service transactions between the exchanges concerned.

The transmission of a booking of a telephone call commences and finishes with the signal " + ".

Punctuation marks are not transmitted.

Details which must be included in the transmission of a booking. — The transmission of every booking includes the following details :

(a) Serial number of the call.

(b) Class of call, for every call other than an ordinary private call and, if necessary, the time for setting up the call.

(c) Name of the subscriber's exchange.

(d) Name of the called exchange and the called subscriber's number ; when a Stock Exchange call is concerned, the designation of the called person is added.

Examples of the transmission of bookings. — Ordinary private call No. 12 from Brussels for the subscriber Marcadet 4628 at Paris :

+ 12 Brussels Paris Marcadet 4628 +

Urgent private call No. 14 from Lyons for the subscriber 219 417 at Berlin :

+ 14 D Lyons Berlin 219 417 +

Urgent service call No. 16 from Lyons for the station 14 794 at Antwerp :

+ 16 AD Lyons Antwerp 14 794 +

The transmission of avis d'appel and préavis bookings includes particulars relating to the establishment of the call resulting from the avis d'appel or the préavis : name or number of the caller, complete name and address of the called person (for an avis d'appel), number and adequate designation of the person or the extension required (for a préavis).

Checking of call details. — Since the operator who transmits a call booking is in a position to check, by reading the telegraph tape, whether all the particulars transmitted to her correspondent are correct, as she should do for each transmission, the collation of the service particulars transmitted can be considered to be superfluous.

Cancellation or modification of call bookings. — In order to cancel a call booking, the originating exchange transmits to the incoming exchange the code " AL " followed by the serial number assigned to the call. The incoming exchange replies in the same form.

The modification of a call booking is notified by the code " TRF " followed by an indication of the new class of call and the serial number. The incoming exchange replies by repeating the request transmitted.

Examples. — Modification of the ordinary private call booking numbered 124 to a booking of an urgent call :

+ TRF D 124 +

Modification of the urgent call booking numbered 138 to an ordinary call booking :

+ TRF P 138 +

Agreement as to the chargeable duration of calls. — This agreement is made by telephone.

RECOMMENDATION No. 32

Transmission difficulties *

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 121;
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 144 and
Yellow Book, Volume Iter, XVIth P.A., Florence 1951, p. 181)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

Article 28, § 8 of the International Telephone Regulations (Paris Revision, 1949), and the necessity to avoid loss of time on international circuits because of transmission difficulties ;

the provisions of Article 30, § 7 of the RTf and the desirability of drawing the attention of supervisors to calls on which transmission is not satisfactory, in order that they may advise the technical services of defective circuits or subscribers' lines,

Unanimously issues the recommendation :

1. That an operator receiving a recall from a subscriber when transmission difficulty occurs, immediately ensures that the operator at the controlling exchange is informed ;

2. That the various operators concerned advise their respective supervisors of all calls giving rise to transmission difficulties specifying, if possible, the nature of the faults verified ;

3. That when a supervisor at the international terminal exchange confirms that, calls being generally satisfactory between two local networks, a conversation exchanged between two particular subscribers' lines has been defective, this supervisor, after assuring herself that the subscriber's line concerned in her own country is in good order, advises the supervisor at the distant international terminal exchange by telephone outside the busy hours.

Example. — If Genève (international terminal exchange serving Vevey) confirms that a call between the subscriber Vevey 3541 and the subscriber Gutenberg 6257 in Paris is defective, the supervisor at Genève, after having had the Vevey subscriber's line proved in good order, transmits to her colleague at Paris the following advice " Call between Vevey and Gutenberg 6257 defective ; test subscriber's line " ;

4. That it is not possible to state exactly the provisions of the International Telephone Regulations fixing the conditions in which the chargeable duration of a call can be reduced because of poor transmission, because general rules cannot be framed on this subject and only observation positions can reveal the manner in which operators determine the chargeable duration of difficult calls ; that, never-

* This recommendation does not concern calls which, before being extended to the subscribers, are recognised as being impossible or defective. In such a case, the international terminal exchange (outgoing side) should notify the technical service that the call cannot take place because of faint transmission.

theless, if, during a call between subscribers' installations permitting the simultaneous connexion of several extensions on the same line, an operator establishes that several persons are on the line at one of these subscribers' installations, no reduction in the chargeable duration should be allowed because of faint transmission.

RECOMMENDATION No. 33

Advice given to the (outgoing) international terminal exchange that the subscribers have answered

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 122*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 145 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 182*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

The provisions of the International Telephone Regulations (Paris Revision, 1949) (Article 30) specifying the moment from which a call should become chargeable and specifying the international terminal exchange whose opinion should prevail in the event of a disagreement on the chargeable duration of a call,

Unanimously issues the recommendation :

That, when conversation does not immediately follow the reply of the two stations to the ring, the operator at the originating international terminal exchange should be advised, by the incoming exchange and, if necessary, by the originating local exchange, that the subscribers have answered. The phrase to be employed is : " A ... (name of exchange giving the advice) exchange ; the subscriber has answered ".

RECOMMENDATION No. 34

International transit traffic with advance preparation operating

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 123*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 145 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 182*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering

The difficulties inseparable from the use of an intermediate exchange for transit calls,

Unanimously issues the recommendation :

1. That it is desirable to provide direct circuits across transit countries whenever the traffic so justifies ;
2. That, in the absence of permanent direct routes, it is advantageous in suitable circumstances, to allocate circuits according to a time-table which enables direct routes to be provided according to traffic requirements ;

Considering moreover,

That, when it is not possible to establish permanent or temporary direct routes, it is desirable to standardise the operating methods at transit exchanges as much as possible and to complete the provisions of the International Telephone Regulations on this subject,

Unanimously issues the recommendation :

That it is desirable that the following operating regulations should be adopted for transit traffic in the case where calls pass through one international transit exchange, that is to say use only two international circuits :

(a) It is necessary that the international transit exchange should be the controlling one, that is to say :

1. that it puts the bookings of calls in time order and
2. that it directs the preparation and the establishment of the calls ;

(b) The call bookings are transmitted as quickly as possible to the international transit exchange (RTf, Article 28, § 2).

The service advices relating to bookings for *préavis* or *avis d'appel* calls in the various categories are transmitted independently of the call bookings in the order indicated in Article 27 of the RTf ;

(c) Following one international transit call, the terminal exchanges can directly exchange other international transit calls, even if the relative bookings have not been transmitted to the international transit exchange ; the direct connexion remaining set up between the terminal exchanges as long as the international transit exchange considers this to be possible, on condition that this exchange has no calls on hand of a class superior to the international transit calls.

(d) The tickets relating to bookings for transit calls in both directions in the same service are put in time order on the same operator's position (controlling position) ; they take their turn among the other tickets in hand on this position according to their class and the time at which they were received at the international transit exchange (RTf, Article 27, § 4).

The first transit call set up, in any one series, must be the most long standing call of the highest class on hand at the controlling position, whatever the direction of the previous call set up between the terminal exchanges and the international transit exchange. The other transit calls in the series are set up alternately in each direction. The international transit exchange resumes the alternate establishment of calls over the two circuits after the connexion is broken down ;

(e) Before the commencement of the last but one call waiting to be set up between the international transit exchange and the two terminal exchanges, the two positions concerned at the international transit exchange advise the other exchanges that a transit call has to be prepared. The terminal exchanges then proceed to call their subscribers. If one of the subscribers does not reply, the international

transit exchange should be advised before the commencement of the last call before the transit call, in order to avoid the unnecessary connexion of the two international circuits when there is no object in doing so, and to permit, if necessary, the preparation of the next transit call ;

(f) International terminal exchanges should hold national circuits and subscribers' lines ready in order to set up transit calls without delay when their turn arrives ;

(g) In the event of a difference of opinion between the outgoing and the transit international exchanges about the chargeable duration of calls, the opinion of the outgoing international terminal exchange prevails (RTf Article 30, § 7).

Note. — For calls routed over more than two international circuits, the Administrations and private operating Agencies concerned designate the controlling exchange by common agreement.

RECOMMENDATION No. 35

Conditions to be fulfilled from the operating point of view by systems of interconnecting four-wire and two-wire international circuits

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 124 ;
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 147 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 184)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation,

That, from the operating point of view, it is desirable for the operating staff always to have the same functions to perform for connecting two circuits, whatever the nature of the circuits.

RECOMMENDATION No. 36

System of naming the letters of words and phrases to be employed in the operation of international circuits

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 125 ;
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 147 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 185)

I. — SYSTEM OF SPELLING

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is necessary, for the transmission of words giving rise to difficulty in reception, to have an international system of spelling by analogy,

Unanimously issues the recommendation :

That the following system of spelling by analogy, established following laboratory tests and operating trials, should be applied in the international telephone service :

LETTERS	WORDS TO BE USED for spelling	LETTERS	WORDS TO BE USED for spelling
A	Amsterdam	N	New-York
B	Baltimore	O	Oslo
C	Casablanca	P	Paris
D	Danemark	Q	Québec
E	Edison	R	Roma
F	Florida	S	Santiago
G	Gallipoli	T	Tripoli
H	Havana	U	Upsala
I	Italia	V	Valencia
J	Jérusalem	W	Washington
K	Kilogramme	X	Xantippe
L	Liverpool	Y	Yokohama
M	Madagascar	Z	Zürich

II. — LIST OF THE PRINCIPAL PHRASES TO BE EMPLOYED IN THE OPERATION OF INTERNATIONAL CIRCUITS

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

Article 28 of the International Telephone Regulations (Paris Revision, 1949);

Considering, moreover,

That in communications, it is necessary to reduce as much as possible the loss of time and mis-operation in the various countries because of the different languages,

Unanimously issues the recommendation :

1. That Administrations and recognized private operating Agencies prescribe that operators serving international circuits use, in the operation of these circuits, the German, English, Spanish, French, Italian, Portuguese, Russian, Swedish and Polish phrases specified by the C.C.I.F. and published under the title : “ List of the phrases most frequently used in the international telephone service.”

2. That, in the services between countries which do not use the German, English, Spanish, French, Italian, Portuguese, Russian, Swedish or Polish language, the Administrations and private operating Agencies prescribe the use of a translation of these phrases into the language employed, by common agreement, in these services.

RECOMMENDATION No. 37

Calls to a subscriber's station which has been temporarily connected with the “ absent subscribers' service ”

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 126*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 149 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 186*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That a call can be charged for only if it has been established with the called station ;

That it is desirable that Administrations and private telephone operating Agencies should not be obliged, each time that a correspondent has been connected with the “absent subscribers’ service” of another country, to confirm whether the conversation exchanged has consisted of a simple request for information or whether a message has been dictated,

Unanimously issues the recommendation,

1. *In the case of calls without préavis :*

That, if the called subscriber’s line has been temporarily connected with the “absent subscribers’ service”, the caller is always informed before the establishment of the call ;

That if the caller agrees to communicate with the “absent subscribers’ service”, the call should be established and the conversation charged according to its category and duration ;

That if communication with the “absent subscribers’ service” is not accepted, the booking should be cancelled and no charge should be made.

2. *In the case of calls with préavis :*

That, if the called subscriber’s line has been temporarily connected with the “absent subscribers’ service”, the caller is always informed before the establishment of the call ;

That, if the caller refuses the call, the charge in respect of the préavis only should be collected ;

That if the call is accepted, the subsequent conversation should be charged according to its duration, and that the supplementary charge for préavis should also be collected.

RECOMMENDATION No. 38

Comparison of the number of minutes of conversation exchanged between international terminal exchanges

(Yellow Book, Volume I, XIVth P.A., Montreux 1946, p. 127 ;
Yellow Book, Volume Ibis, XVth P.A., Paris 1949, p. 149 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 187)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to facilitate the daily comparison of the minutes exchanged [comparison envisaged in Article 50, § 2, of the International Telephone Regulations (Paris Revision, 1949)]

Unanimously issues the recommendation ;

That the provision of the RTf (Article 30, § 7 [2]) should be clarified as follows when the Administrations and private operating Agencies concerned have decided to apply this procedure in operating with advance preparation of calls :

After each call, the operators agree the chargeable duration in the form : three minutes, for calls of three or less than three minutes duration and, in other cases : four minutes or seven minutes, or only five minutes (difficult call of an actual duration of eight minutes) ; in addition, the class of call will be indicated except in the case of an ordinary call, for example : urgent or lightning, préavis or avis d'appel.

In the case of a préavis or an avis d'appel not followed by conversation, the following indication is transmitted as soon as the exchanges concerned know that conversation cannot take place : chargeable préavis, non-chargeable préavis ; chargeable avis d'appel, or non-chargeable avis d'appel.

RECOMMENDATION No. 39

Instruction of telephone exchange staff

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 127 ;*
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 150 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 188*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the professional instruction of the operating and supervising staff is of the greatest importance in ensuring efficient use of the circuits in the international telephone service ;

That to this end, it is most desirable to improve supervisors' and operators' knowledge of the language of other countries and to enable them to become informed about the customs of the subscribers, the organisation of the service and the manipulation of the equipment at the other end of the circuit,

Unanimously issues the recommendation :

That exchanges of supervisors and telephonists should take place frequently between the telephone exchanges of different countries, whenever they are justified by the circumstances and the volume of traffic ;

Considering, moreover,

That, however perfect the professional training of operators, the circuits will be used more efficiently when they are always served by the same telephonists,

Unanimously issues the recommendation :

That it is desirable, if there is no objection from the point of view of the national service, that the international circuits should always be staffed by the same operators.

RECOMMENDATION No. 40

Difficulties arising from differences of language in the rapid international telephone service

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 128*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 151 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 189*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That if the methods already in force in the internal services of certain countries, are applied without restriction in the rapid international telephone service, difficulties will occur because of differences of language, in the relations between the outgoing operator and the transit and terminal exchange operators in the distant country and in the relations between this operator and the called subscriber ;

That these difficulties will be particularly noticeable when incidents (lack of free circuits, for example) hinder the normal establishment of calls or when these are of a special character, such as : *préavis*, collect calls, etc.,

Unanimously issues the recommendation :

That, at least in the transitory period, the incoming operator at the international terminal exchange intervenes in each call to effect its completion in her own country.

RECOMMENDATION No. 40 bis

Time to answer of operators

(Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 189*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That a rapid answer to signals by the operators at the incoming international exchange is essential to ensure a rapid service, and that it is very important from the point of view of efficient use of the international circuits, which are expensive,

Unanimously issues the recommendation :

1. That endeavour should be made to provide, at the incoming positions at international terminal exchanges, a number of operators with team working between them, so that the time to answer incoming signals shall not exceed five seconds *on the average*.

2. That nevertheless, during the busy hours, in 80 % of the cases the time to answer should not exceed ten seconds. Outside the busy hours, endeavour should be made to provide a similar quality of service.

D. CHARGES AND METHODS OF APPLICATION OF CHARGES

RECOMMENDATION No. 41

International telephone charges

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 129*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 151* and
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 190*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

Article 32 (§ 1, 2 and 3) of the International Telephone Regulations (Paris Revision, 1949) which stipulates that the charges for international telephone calls are normally made up of terminal charges accruing to the Administrations or private operating Agencies of origin and of destination (terminal Administrations or private operating Agencies) and of transit charges accruing to intermediate Administrations or private operating Agencies if any (transit Administrations or private operating Agencies), the territory of the terminal Administrations or private operating Agencies being divisible into zones for charging purposes, a uniform charge being adopted for a given zone,

Considering, on the other hand,

That the reduction of the number of charging zones permits the simplification of tariffs which simplifies the calculation by the operating services of the charges applicable to the various types of call, and the settlement of international accounts by the accounting departments,

Considering, however

That the number of charging zones cannot always be reduced below a certain number because this might result particularly in the case of services between large neighbouring countries, in a certain lack of uniformity in the tariffs, so that the charges applied would not always be equitably proportioned to the services rendered,

Unanimously issues the recommendation :

That the following directives should be taken into account by Administrations and private operating Agencies when, in their full sovereignty, they negotiate between themselves agreements as regards the charges to be applied in future in the international telephone services which concern them.

I. — DIRECTIVES FOR THE CALCULATION
OF INTERNATIONAL TELEPHONE CHARGES

(a) *Calls using a long distance radiotelephone circuit*

1. It is desirable that each European country should constitute one zone of charge only, for each service using a radiotelephone circuit ;

2. The terminal and transit quotas in respect of the land link are fixed by agreement between the Administrations and private operating Agencies concerned.

(b) *Calls not using a long distance radiotelephone circuit*

1. The charges for international telephone calls not using a long distance radiotelephone circuit are calculated according to the crowflight distance, taking as a basis the net cost ;

2. For calculating terminal charges, each country may be divided into charging zones. The charge for services with a given country is then the same inside a given charging zone. It is calculated on the distance between this charging zone and the frontier ; this distance is fixed for each charging zone by the Administration or private operating Agency concerned, the latter being free to fix the limits of its charging zones having regard to its own traffic or to financial or other considerations. If need be, different charging zones may be fixed in a given country for traffic exchanged with different countries.

When new telephone services are being established, or on the occasion of alterations in charges, it is desirable, especially in the case of services between non-neighbouring countries, and, in particular, in the case of services between distant countries, that the Administrations or private operating Agencies concerned should endeavour to reduce the number of charging zones and should even examine the possibility of having a single charging zone for the whole country, provided no difficulties or anomalies in the establishment of tariffs arise therefrom. In general, this reduction in the number of zones seems possible in the case of countries of relatively small extent and whose configuration is more or less square or circular or in the case of relatively large countries where the international terminal exchange or exchanges are, or will be for some time, some distance from the frontier. In any case, it is desirable that the two terminal countries should reduce simultaneously the number of their charging zones in the telephone service between them.

It is very desirable that all the international terminal exchanges should have detailed and up-to-date records showing, for the different countries with which telephone service is available, the charging zones to which the different localities with which telephone service is open to the public belong. With the aid of such records a large number of requests for information between operators, which occupy circuits unnecessarily, are avoided and the number of queries at the time of settlement of the international accounts is reduced.

3. The transit charges applied by the Administrations or private operating Agencies of the intermediate countries through which the circuits pass, are

calculated, for each transit country, according to the average crowflight distance between the points of entry and exit of the international circuits.

4. In the case of mountainous countries, or countries with a peculiar geographical configuration, in which the actual route followed by the circuits is inevitably very circuitous, the distance on which the terminal charge is calculated may be appreciably greater than the straight-line distance between the frontier and the point in the zone in question which is the most distant measured on a crowflight basis ; in the same way, in a mountainous country or one having an exceptional configuration, the crowflight distance between the points of entry and exit on which the transit charge is based, may be increased.

5. If there is a submarine section, the length of this section may, in the distance used for the calculation of the terminal or the transit charge, be multiplied by a coefficient by the Administration or private operating Agency concerned, taking into account the annual charges (including interest, depreciation and maintenance).

II. — DIRECTIVES FOR THE CALCULATION OF INTERNATIONAL TELEPHONE CHARGES

In 1935 the C.C.I.F. calculated the net cost of international telephone calls (not using a long-distance radiotelephone circuit) established over the European circuits then used (symmetrical pairs, coil loaded pairs, pairs equipped with repeaters and pairs operated at voice frequencies only).

In 1949 the C.C.I.F. studied the net cost of international telephone calls (not using a long distance radiotelephone circuit) established over European circuits of modern types (carrier current systems on symmetrical pairs in cables or on bare overhead lines, giving at least twelve telephone circuits).

In the study made in 1935, the calculations were made on the following bases :
average traffic passed over such an international circuit : 200 minutes at the full tariff per working day and 300 working days per year ;

- proportion of reserve international telephone circuits in underground cables ; an average of 40 % (that is, 60 working circuits and 40 spare circuits for each 100 in all) ;
- percentage of interest payable on capital borrowed : 6 % ;
- average life of an underground cable : 35 years ;
- average percentage difference between the actual length of international telephone circuits and the crow-flight distance : 30 % ;

In the study made in 1949, the calculations were made on the following bases :

- average traffic carried per circuit : 180 chargeable minutes at the full tariff per working day and 300 working days per year ;
- proportion of spare capacity in underground cables : an average of 40 % of the conductors (that is, 60 working conductors and 40 spare conductors per 100 conductors) ;
- an average of 20 % of terminal equipments (that is, 80 working equipments and 20 spare equipments per 100 equipments) ;

- percentage of interest charged on borrowed capital : 5 % ;
- average life of an underground cable : 30 years ;
- average life of terminal equipment : 15 years ;
- percentage difference between the actual length of international telephone circuits and the crowflight distance : 30 % ;

Following the studies made in 1935 and 1949, the C.C.I.F. estimated that, normally, the net cost of a call could be considered as covered by the following amounts :

A. *Frontier Relations*

Maximum frontier charge per three-minute call: 0.60 gold francs for crowflight distances of less than 25 kilometres between networks and 1 gold franc for crowflight distances between 25 and 50 kilometres.

B. *Other Relations*

The C.C.I.F. has taken into consideration the fact that the General Inter-connection Plan 1952-1954 established by the XVIth Plenary Assembly at Florence in 1951 has not yet been developed in all countries as speedily as had been expected.

The C.C.I.F. stated that three conditions were to be found in practice :

(a) In certain relations high speed transmission lines had not yet been established, that is, no carrier current telephone systems were used ; calls were still set up over old type circuits, coil-loaded or equipped with repeaters, or over bare overhead lines worked at voice frequencies. In these relations, the following former directives could still apply :

Costs of depreciation, interest on capital involved and maintenance of the international circuit (excluding any inland trunk circuit required to connect the international terminal exchange with the trunk exchange serving the subscriber) :

0.60 gold francs per 3 minute call and per 100 kilometres of crowflight distance (each fraction less than 50 kilometres being rounded up to a maximum of 50 kilometres and each fraction between 50 and 100 kilometres being rounded to a maximum of 100 kilometres).

Note. — The studies carried out in 1935 had shown that in short distance services (up to about 300 kilometres) and in which traffic is routed over direct circuits, the portion of the net cost of the call proper to the international circuit is appreciably less than 0.60 gold francs per 100 kilometres.

Operating costs of an international terminal exchange: 0.60 gold francs per 3 minute call (whether for a terminal exchange or a transit exchange).

However, as the charges in gold francs calculated on these bases may exceed those which users would be willing to pay, Administrations or private operating Agencies are naturally free by agreement between themselves to make lower charges than those calculated in accordance with the foregoing directives.

(b) On the other hand, in certain relations the high speed transmission lines envisaged in the General interconnexion Plan have already been constructed, to the extent that the great majority of calls are set up over modern type carrier current routes, for which a new study of the net cost had been carried out in 1949.

As a result of the study made in 1949, the directives for calculating international telephone charges in these relations should be as follows :

Cost of depreciation, interest on capital involved, and maintenance of the international circuit (excluding any inland trunk circuit required for connecting the international terminal exchange with the trunk exchange serving the subscriber) : 0.25 gold francs per 3 minute call and per 100 kilometres of crowflight distance (any fraction less than 50 kilometres to be rounded to a maximum of 50 kilometres and any fraction between 50 and 100 kilometres to be rounded to a maximum of 100 kilometres).

Operating expenses of an international terminal exchange, including terminal equipments of the carrier current system : 0.80 gold francs per 3 minute call (whether a terminal exchange or a manual transit exchange is involved).

(c) In certain international relations, a transition stage has been reached, in that the work of carrying out the General interconnexion Plan has begun, but has not been completed. In this case, taking account of the existence of both old and new-type circuits in similar proportions, the amount of 0.25 gold francs per 3 minute call and per 100 kilometres of crowflight distance, intended to cover costs of depreciation, interest on capital involved and maintenance of the circuit concerned, should provisionally be increased to 0.40 gold francs until the particular part of the General interconnexion Plan has been completed. However, during this transitional period the gold franc charges applied in certain international services are already lower than those calculated in accordance with the recommendation for the transitional period ; it is desirable that the charges in these services should not be increased.

Comparison of the net costs in gold francs of a three minute international telephone call in the three cases envisaged by C.C.I.F. Recommendation No. 41

	FORMER CONDITIONS (case a)	NEW CONDITIONS (case b)	TRANSITIONAL PERIOD (case c)
I. — Elements of the calculation :			
per 100 km of circuit	0.60	0.25	0.40
per international exchange	0.60	0.80	0.80
II. — Example (total charge)			
Relations in which the crowflight distance is :			
Less than 100 kilometres	1.80	1.85	2.00
Between 100 and 200 kilometres . . .	2.40	2.10	2.40
Between 200 and 300 kilometres . . .	3.00	2.35	2.80
Between 300 and 400 kilometres . . .	3.60	2.60	3.20
Between 400 and 500 kilometres . . .	4.20	2.85	3.60
Between 500 and 600 kilometres . . .	4.80	3.10	4.00

Note. — When Administrations, in their full sovereignty, negotiate between one another agreements with a view to reductions in the charges (in gold francs) in force, they should take into consideration the suggestions below :

(1) The charges at present applied are generally less than or equal to those indicated in the column “ former conditions (case *a*) ”, of the foregoing table. When envisaging a reduction of the charge applied in a telephone service, it is necessary to make sure that a sufficient number of circuits will be available to deal with the additional traffic which may result from this reduction in charge.

(2) In order to change from the former charge (case *a*) to the transitional charge (case *c* of the same table), it is sufficient if in the international service concerned (case of a service between adjacent countries, that is to say without transit), about 50% of the circuits are of the modern type (established over high speed transmission lines).

If in the service concerned, one or several transit countries are involved, it will be desirable to commence discussions with a view to reducing the charges when all the administrations concerned have put into service on this route about 50% of the modern type international circuits.

(3) If it happens that, in the case of an international route to be set up between two neighbouring countries, one of the countries has completed the section on its territory before the other country has done the same, the first country has the right to maintain its quota at the amount determined under the “ former conditions ” of the table until the second country has completed its part of the project.

If, on the other hand, in order to increase traffic the second country which has not yet completed its section of the line agrees to reduce its quota, a reduction in charges could be envisaged, because each will have made its share of the sacrifice towards the reduction.

Note 1. — The Administrations concerned will enter into direct correspondence with one another for the application of the above suggestions.

Note 2. — The standards in the table above do not apply to countries in which the telephone system is less highly developed.

RECOMMENDATION No. 42

Diminishing tariff

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 136*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 157 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 196*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That a diminishing tariff would complicate the calculation of international charges and the establishment of international accounts ;

That it would entail technical complications in the case of an automatic trunk service ;

That such a tariff would benefit only a minority of users ;

That, for the user, the service rendered after the first minutes has the same value as that rendered during these first minutes ;

That, according to the calculation of net costs, the reduction in charge which could be considered after the first minutes could not in any case be very large ;

Unanimously issues the recommendation :

That, in the international telephone service it is not desirable to apply a diminishing tariff based on the duration of the telephone call.

RECOMMENDATION No. 43

Calls to a private branch exchange

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 137 ;*
Yellow Book, Volume I bis, XVth P.A., Paris, 1949, p. 157 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 196)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering, ..

Article 30, § 1, of the International Telephone Regulations (Paris Revision, 1949), which stipulates that “ the chargeable duration of a call between subscribers begins at the moment when communication is established between the calling and called stations after the two stations have replied to the ring, whoever the person might be who answers ” ;

That the préavis class of call has been provided in order to guarantee that, in the case of a private branch exchange, the caller will obtain the extension station, or the person, actually required ;

That it is impossible for Administrations and private operating Agencies to take into consideration conditions relating to the operating of subscribers' private branch exchanges, since that might give rise to dissatisfaction or lead to abuse ;

Unanimously issues the recommendation :

That in the case of a call without préavis to a private branch exchange, the chargeable duration of the call should begin at the moment when, communication being established between the calling station and the private branch exchange, the calling station and any station of the private branch exchange have replied to the ring.

RECOMMENDATION No. 44

Charging for conference calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 137 ;*
Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 158 and
Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 197)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

That the following provisions should be applied as regards conference calls :

The charge for a conference call should consist of the main charge and any appropriate additional charges :

The main charge should be calculated on the basis of the charges applicable in the services between the exchange selected as the controlling exchange (nodal exchange) and the various international terminal exchanges involved, irrespective of the number of correspondents.

The additional charges should be fixed by each of the countries concerned, taking into account :

(a) the inland circuits used as necessary beyond the international terminal exchange ;

(b) the costs of any equipment required in the exchanges to set up the conference calls.

The whole of the charges for a conference call, fixed by agreement between the countries concerned, is collected from the caller.

The main charge is, in principle, shared among the various countries concerned in accordance with the regulations applicable to ordinary calls. The additional charges are allocated to each of the Administrations or private operating Agencies concerned.

RECOMMENDATION No. 45

Charges for subscription calls

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 138 ;*

Yellow Book, Volume I bis, XVth P.A., Paris 1949, p. 159 and

Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 198)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it would be advantageous to apply regulations tending to equalise traffic throughout the day ;

That it would however be unwise to generalise without sufficient experience of differential charges,

Unanimously issues the recommendation :

That as an experiment and by agreement between the Administrations and private operating Agencies concerned, subscription calls admitted between 4 p.m. and the beginning of the period of light traffic should be subject to a charge equal to $\frac{4}{5}$ of the tariff applicable to ordinary calls during the period of heavy traffic.

RECOMMENDATION No. 46

Charge for calls from or to a public call office

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 138 ;*

Yellow Book, Volume I bis, XVth P.A., Paris, 1949 p. 159 and

Yellow Book, Volume I ter, XVIth P.A., Florence 1951, p. 198)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the " amount of the unit charge shall be fixed on the basis of the gold franc by agreement between the Administrations and/ or recognized private operating Agencies concerned " (RTf, Article 31, § 2) ;

That the establishment of an ordinary call from or to a public call office entails special expenses but that these special expenses are negligible in comparison with the other costs involved in the establishment of an international call,

Unanimously issues the recommendation :

That it is preferable not to collect a supplementary charge for the use of a public call office for an international call, but that, notwithstanding, the Administrations and private operating Agencies which collect a supplementary charge in their internal services, may apply such a supplementary charge to international calls ; it being understood that this supplementary charge is not included in the international accounts.

RECOMMENDATION No. 47

Charges for press calls

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 139*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 160 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 199*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

On the one hand, that international telephone charges are at present fixed in very close relation to net costs and that any reduction in favour of certain classes of user would lead Administrations and private operating Agencies to increase the general tariff ;

On the other hand, that as telephonists are unable to follow the conversation exchanged by correspondents, Administrations and private operating Agencies are not in a position to establish charges varying according to the subject of the conversation and that, as regards conversations between newspaper correspondents and their newspapers, it would not be possible to know whether copy intended for publication or conversation of a different nature was concerned,

Unanimously issues the recommendation ;

That there is no reason for granting a reduction in international telephone charges in favour of Press calls.

RECOMMENDATION No. 48

Minimum traffic to be guaranteed to transit countries

(Yellow Book, *Volume I; XIVth P.A., Montreux, 1946, p. 139*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 169 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 200*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That terminal Administrations and private operating Agencies should have a considerable measure of freedom for asking transit Administrations and private

operating Agencies to put circuits at their disposal and that the transit Administrations and private operating Agencies should be able to satisfy demands for direct circuits without being deterred by the fear that the traffic passed over these circuits would not provide them with sufficient revenue to meet the costs of setting up and maintaining the transit circuits ;

Unanimously issues the recommendation :

That it should be agreed that an Administration or private operating Agency which is asked to provide a circuit for transit traffic should have the right to ask in return the guarantee of a minimum revenue,

Considering,

That the traffic which can be passed over a given circuit depends to a considerable extent on the manner in which it is maintained and it seems desirable to interest the transit country, by a more satisfactory method than the fixing of a guaranteed annual payment, in the maintenance of a high quality service producing a satisfactory revenue as a result of first-class maintenance of the portion of the circuit which is under the care of this transit country, and that this result can be achieved by interesting the transit country in the total amount of the traffic passed over the circuit in the form of a share proportionate to the number of calls exchanged, with a guaranteed minimum revenue,

Unanimously issues the recommendation :

That this method should be used in preference to that of the guaranteed rental without however excluding it ;

Considering,

That the experience gained does not appear sufficient to justify the fixing, even provisionally, of a normal minimum value and that the point of view of the transit countries in this matter will depend, to a large extent, on the costs at the time the circuits required are set up as well as on the possibility of using available circuits,

Unanimously issues the recommendation :

That the Administrations and private operating Agencies concerned should be left to fix this minimum by direct negotiations between themselves ;

Considering,

That the revenue derived from a telephone circuit depends to a large extent on the daily maintenance of this circuit,

Unanimously issues the recommendation :

That if a minimum revenue is guaranteed, a reduction should be made in the event of interruptions of the circuit in the transit country, unless the transit country undertakes to replace the defective circuit by another ; the reduction to take into account interruptions of a full day's duration reckoning the period between 9 a.m. and 3 p.m. as a full day ; if the emergency route involves the intervention of an exchange, the charge due to the Administration or private operating Agency is not altered ;

Considering,

That the legal times of the countries concerned may not be the same,

Unanimously issues the recommendation :

That the precise times of the beginning and end of the period of interruption which must be taken into account (9 a.m. to 3 p.m.) as well as all other details relative to the reduction because of the interruption, should be fixed by direct agreement between the countries concerned.

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

That the guaranteed minimum should be applicable only in respect of the circuits allocated by a transit Administration or private operating Agency for the exclusive use of the terminal countries, the partial use of other circuits being paid for in the usual way by means of a transit charge for each effective call passed over the circuit.

RECOMMENDATION No. 49

Broadcast transmissions

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 141*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 162 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 202*)

I. — CONDITIONS OF ADMISSION

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That requests for the use of circuits to effect these broadcast transmissions should continue to necessitate the intervention of the central Administrations or of the "controlling services" to whom the Administrations and private telephone operating Agencies have delegated their authority in this matter,

Unanimously issues the recommendation :

That broadcast transmissions should be admitted under the following conditions :

1. Requests for the use of circuits for broadcast transmissions should be addressed by the broadcasting organisation (or organisations) which control the broadcast receiving station (or stations) to the "controlling service" of its country (or their countries).

The list of controlling services in the different countries to which the broadcasting organisations should apply to obtain circuits (a list containing the names, exact postal addresses, telegraphic addresses and also telephone numbers of these various services) has been forwarded to the Administrations and private operating

Agencies belonging to the C.C.I.F. by the Secretariat of the C.C.I.F., these Administrations and private operating Agencies undertaking to pass this list on to the broadcasting organisations of their respective countries.

Requests for the use of circuits for broadcast transmissions should always be made at the earliest possible moment and in any case with sufficient notice to allow the telephone Administrations and private telephone operating Agencies to take the necessary measures to arrange the broadcast transmission in question. These requests should be complied with if no inconvenience to the general telephone service is likely to result and if technical considerations permit.

2. For each international broadcast relay affecting only receiving radio stations situated in one country, the broadcasting organisation which controls the receiving radio station or stations, after preliminary agreement with the broadcasting organisation controlling the transmitting microphone, should make, to the controlling service of its country, a request for the use of the necessary circuits, accompanied by an undertaking to pay the whole charge in respect of the use of these circuits.

3. For each international broadcast relay affecting broadcast receiving stations situated in several countries, the procedure is as follows :

The list of broadcasting stations which are to receive the transmission (showing the telephone exchange to which the transmitting microphone is connected) is sent to each of the broadcasting organisations concerned, by the broadcasting organisation controlling the transmitting microphone ; each broadcasting organisation should send this list to the controlling service of its own country, after having added thereto, where necessary, the additions or modifications which it considers necessary. This list should include the designation of all the control circuits required and, where necessary, of all the reserve circuits requested.

The controlling services appoint, by mutual agreement, a controlling service for the relay in question.

This controlling service should inform each of the controlling services concerned at the earliest possible moment of the circuits to be used and the special repeater station or stations with which the broadcasting organisations may communicate if any unforeseen incident, which must be rectified urgently, arises in the course of the broadcast transmission.

As soon as it has received the necessary information concerning the circuits for the use of which it will have to pay, each broadcasting organisation controlling one or more broadcast receiving stations should forward *without delay* to the controlling service of its country a request for the use of these circuits with an undertaking to pay the whole charge in respect of their use.

To facilitate this procedure it is desirable that the broadcasting organisations should study in advance the cases of multiple relays which are likely to occur frequently (see the following annex).

It is also desirable that the General Secretariat of the International Telecommunication Union should keep up to date the map of European international circuits for broadcast transmissions.

II. — CONTROL CIRCUITS

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

That the following recommendations should be observed for the constitution of control circuits in connexion with the use of broadcast circuits :

Definitions.

The *control circuit* (circuit de conversation) is a telephone circuit which provides a direct connexion between the place where a transmitting microphone is installed and the point where the broadcast programme is used (recording apparatus or radio broadcasting station). This connexion is used to supervise the transmission of the programme broadcast and it enables any necessary remedial measures to be taken quickly in case any difficulties or interruptions occur during the transmission ; it also permits the broadcast transmission circuit to be released at the right moment and it provides, therefore, the appropriate means by which the chargeable duration of the broadcast transmission can be precisely determined.

For the setting-up of control circuits the following distinctions should be drawn between “ regular ” and “ occasional ” broadcast transmissions.

Regular transmissions are those which are ordered once for all because they take place at regular intervals, at the same times, over the same routes always between the same points.

Occasional transmissions are all transmissions which do not fall within the above definition.

Constitution of control circuits

It is desirable to distinguish between the following cases :

- simple broadcast transmissions ;
- multiple broadcast transmissions.

Simple broadcast transmissions

In the case of regular transmissions, especially if the programme transmitted is of such a nature that the broadcasting organisation is ready to tolerate any incident which might occur because of the absence of a control circuit during the transmission of the programme, the use of a control circuit should be obligatory only during the “ preparatory period ” *.

For certain regular transmissions effected over a long period, the use of a control circuit might even be dispensed with during the preparatory period if the broadcasting organisations so request.

In the case of an occasional transmission, the use of a control circuit should in principle be obligatory during the preparatory period and should be earnestly

* The preparatory period is the period between the time when the circuit is handed over to the broadcasting organisation and the time when the transmission proper begins.

recommended throughout the broadcast transmission ; indeed, the broadcasting organisations are interested in reducing as much as possible the duration of any incidents which occur during the transmission of the broadcast programme and, on their part, the telephone Administrations should watch that too great a power is not employed in the course of the transmission such as to cause a risk of troubles on telephone circuits in the same artery.

Multiple broadcast transmissions (or multiple relays)

1. *Multiple broadcast transmissions in which the sound is picked up at one-point only.*

If the first distribution point of the broadcast transmission circuits serves a broadcast transmitting station in the same town and participating in the multiple transmission, it is strongly recommended that control circuits should be envisaged, at least :

(a) between the studio where the transmitting microphone is installed and the distribution point of the broadcast transmission circuits ;

(b) between the first distribution point and the various broadcast transmitting stations.

When the above conditions does not apply, it is recommended that as far as possible control circuits should be envisaged between the studio where the microphone is installed, on the one hand, and the various broadcast transmitting stations, on the other hand.

In the two cases indicated above, control circuits should always be provided during the preparatory period and their use should be recommended throughout the transmission of the programme.

2. *Multiple broadcast transmission with several sound pick-up points.*

A preliminary study should be carried out between the broadcasting organisations and the telephone Administrations concerned in order to determine what control circuits should be insisted upon during the preparatory period and which control circuits should be recommended for use during the transmission of the broadcast programme.

Experience has shown that in the case of two-way multiple broadcast transmissions with several sound pick-up points, in order that the programme concerned shall proceed satisfactorily, it is desirable to have control circuits between the studio directing the transmission and the various sound pick-up points.

General remark. — The broadcasting organisations should be informed that when they decide to dispense with the use of a control circuit during the transmission of a broadcast programme, they are not entitled to claim a reduction of the charge on account of some incident occurring during the course of the transmission, even if the incident is due to a breakdown in the broadcast transmission which could not be remedied quickly because of the absence of a " control circuit ".

III. — CHARGING

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That although, if need be, ordinary telephone circuits can be used for broadcast transmissions, it is necessary, in order to transmit music and even speech perfectly, to have circuits on which cross-talk is reduced as completely as possible and effectively transmit a wider band of frequencies than ordinary telephone circuits ;

That the types of circuits can be distinguished as shown in the following table :

TYPE OF CIRCUIT	AUDIO frequency band satisfactorily transmitted	WIDTH of frequency band used in a carrier current system of modern type (spacing of virtual carrier current frequencies for telephony : 4,000 c/s)
Ordinary telephone circuit	300 to 3400 c/s	4,000 c/s
Broadcast transmission circuit of old type	At least 50 to 6,400 c/s	8,000 c/s (the question is being studied)
Broadcast transmission circuit of normal type	At least 50 to 10,000 c/s	12,000 c/s

That “ circuits for broadcast transmissions ” are of a much higher net cost than ordinary telephone circuits ;

That the costs of maintenance and supervision of broadcast transmission circuits are much higher than for ordinary telephone circuits ;

Unanimously issues the recommendation :

That when “ broadcast transmission circuits ” are available, these special circuits should be used for all broadcast transmissions instead of having recourse to ordinary telephone circuits ;

That there is a case for applying, for the use of such broadcast transmission circuits, a higher charge than for the use of ordinary telephone circuits (see below) ;

That no distinction should be drawn between the periods of heavy and light traffic concerning the use of “ broadcast transmission circuits ” for broadcast relays ;

A circuit for broadcast transmissions is a channel for uni-directional transmission. If a broadcast transmission is to be carried out simultaneously in both directions, as it is necessary to use two special circuits, it should count as two distinct broadcast transmissions. In the exceptional case where an ordinary telephone circuit is used for a broadcast transmission, it is desirable to apply to this trans-

mission the “ charge for ordinary calls ” during the charging period in which the relay is carried out *.

Similarly, it is desirable to apply the “ charge for ordinary calls ” for the use, during a broadcast transmission, of the so called “ control circuits ”, which enable the broadcasting organisations to exchange the service particulars necessary for the organisation and supervision of the broadcast transmission.

A surcharge is collected on every effective broadcast transmission, whatever the type of circuit used, to offset the costs incurred by the addition of special technical equipment to the international circuits, or for modifications to the normal adjustment of existing equipment on these international circuits ; as well as the supplementary expenses for personnel and material arising from either the exchange of telegraph and telephone orders for the preparation of a broadcast transmission ; or the setting up and testing of the chain of circuits required for the broadcast transmission. This charge is shared between the Administrations and/or private operating Agencies concerned on the same basis as the charge for the broadcast transmission itself. This surcharge is equal to the charge applicable : for 8 minutes of ordinary conversation exchanged between the extreme points considered, if an ordinary telephone circuit is used — for 10 minutes, if an old type circuit is used for the transmission — and for 24 minutes if a “ normal type broadcast transmission circuit ” is used.

The surcharge is not due if the broadcast transmission does not take place as a result of circumstances attributable to the telephone service.

It is intended that this surcharge includes the charges which should be collected for telegrams and telephone calls exchanged to prepare for the broadcast transmission. This surcharge is not applied to control circuits.

Rules for charging. — Broadcast transmissions should provisionally be charged as follows :

1. In the general case where the broadcast transmissions are effected by means of “ broadcast transmission circuits ”, the charge applied is :

* In order to avoid differences of interpretation which could occur on this subject, it is recalled that it is desirable provisionally, and pending a new examination of the question by the C.C.I.F. to understand by “ tariff for ordinary calls ”, the following tariff :

(a) For the part of the broadcast transmission in the period of heavy traffic, the charge appropriate to ordinary calls during the period of heavy traffic should be collected ;

(b) For the part of the broadcast transmission in the period of light traffic, the charges to be collected are

— half ($\frac{1}{2}$) the charge appropriate to ordinary calls during the period of heavy traffic if a subscription transmission or a transmission of which the duration (during the period of light traffic), is at least an hour ;

— three-fifths ($\frac{3}{5}$) of the charge appropriate to ordinary calls during the period of heavy traffic, in other cases.

Legal time in the country receiving the broadcast transmission will be used in order to determine the period of heavy traffic or the period of light traffic.

— 1.25 times the charge for ordinary telephone calls during the period of heavy traffic [see the table at the end of Recommendation No. 41 "International Telephone Charges" 1st column "Former conditions (case a)"] if use is made of "a broadcast transmission circuit" either completely or only partly of the old type, and a surcharge corresponding to 10 minutes of ordinary conversation during the period of heavy traffic at the aforesaid tariff;

— 3 times the charge for ordinary telephone calls during the period of heavy traffic [see the 2nd column of the aforesaid table "New Conditions (case b)"] if use is made of a circuit which throughout its length is of "normal type" for broadcast transmissions, and a surcharge corresponding to 24 minutes of ordinary conversation during the period of heavy traffic at the aforesaid tariff.

In the transitory period [envisaged in Recommendation No. 41 aforesaid (case c)] the tariff to be applied to international broadcast transmissions established by means of circuits which are of normal type throughout their length, should be the subject of an agreement between the Administrations and private operating Agencies concerned.

As it would not be normal to provide reserve circuits, if the broadcasting organisations consider it necessary to have available such reserve circuits for a particular international broadcast relay, these circuits are paid for at the same tariff as if they had been used to effect the relay throughout its whole duration.

The control circuits are charged at the "tariff for ordinary telephone calls" * and are not subject to the surcharge.

2. In the exceptional cases in which broadcast transmissions are effected by means of ordinary telephone circuits the "charge for ordinary calls" *, is applied, together with a surcharge corresponding to 8 minutes of ordinary conversation exchanged during the charging period (heavy traffic or light traffic) in which the broadcast transmission began.

3. When a broadcast transmission is effected on a circuit set up partly by means of a "broadcast transmission circuit" and partly by means of an "ordinary telephone circuit", the circuit is wholly charged for at *the rate appropriate to ordinary calls during the period of heavy traffic*: the surcharge is equal to the charge applicable to 8 minutes of ordinary conversation exchanged during the period of heavy traffic and the total is shared between the Administrations and/ or private operating Agencies concerned pro rata to the quotas normally ** accruing to them for the section of the broadcast transmission circuit or of the ordinary telephone circuit which they have put at the disposal of the broadcasting organisations.

* See page 103.

** For the division of the overall charge appropriate for the broadcast transmission, a "hypothetical charge" is calculated on the basis of the charge for ordinary calls during the charging period to be considered; for the countries which have furnished broadcast transmission circuits through their territory, the "hypothetical charge" is calculated by multiplying by 1.25 the charge for ordinary calls during the period of heavy traffic, irrespective of the quality of the broadcast transmission circuit used. The division of the overall charge is made pro rata to these "hypothetical" charges.

In general, and altogether provisionally, the section of "normal type circuit" included in a mixed chain of broadcast transmission circuits will be regarded as an "old type circuit".

The charge relative to the use of a circuit is debited to the broadcasting organisation (State or private) which has undertaken to pay for the circuit in question. It is due for the whole period during which the circuit is placed at the disposal of this broadcasting organisation before the broadcast transmission proper.

The supervision of an international broadcast transmission is generally effected by the terminal repeater stations of the broadcast transmission circuit concerned.

It is possible that the equipment at the telephone exchanges will permit the operating personnel, already responsible for fixing the chargeable duration of ordinary telephone calls, to be entrusted with the task of determining the chargeable duration of a broadcast transmission and in that case this chargeable duration should be fixed with the same precision as for a telephone call.

In the case where the equipment of the telephone exchanges in question does not permit this procedure, the technical officers of the terminal repeater stations should come to an arrangement between themselves, for fixing accurately at the end of the broadcast transmission :

- (1) the time at which the circuit was placed at the disposal of the broadcasting organisation (beginning of the chargeable duration) ;
- (2) the time at which the circuit was released by the broadcasting organisation (end of chargeable duration) ;
- (3) when necessary, the times and duration of any interruption or incident which may have occurred (in order to make any reduction in the charge).

The time at the beginning and end of the chargeable duration, as well as the time of occurrence and duration of any breakdowns which may occur, are entered on a daily report conforming to the specimen reproduced below.

This daily report is sent on the same day to the office responsible for co-ordinating all the details necessary for the establishment of the international accounts.

In addition, the details relative to the interruptions are noted on the report sent periodically to the technical services concerned.

When the two exchanges at the terminals of each circuit (or section of circuit) having participated in a broadcast transmission, have agreed on the chargeable duration of this transmission, the exchange situated nearest the broadcasting organisation which has to pay for the use of the circuit (or of the section of the circuit) concerned, should notify this organisation of the number of chargeable minutes.

If the transmission is intercepted, at intermediate exchanges, by other broadcasting stations, the broadcast transmission is, from the point of view of the charge, considered as several distinct calls ; the one between the originating exchange and the first intermediate broadcasting station ; the others between the consecutive broadcasting stations or between a distribution point and an intermediate broadcasting station, or between the last intermediate broadcasting station (or the last distribution point) and the terminal broadcasting station.

In the case where a broadcasting organisation, not considering the quality of transmission satisfactory on the direct circuit for broadcast transmissions, requests the use of an indirect circuit made up of broadcast transmission circuits passing through countries other than those through which the direct broadcast transmission circuit passes, the charge applicable is based on the sum of the broadcast transmission charges in respect of each of the circuits interconnected.

If two broadcasting organisations have not been able to modify their transmission times by mutual agreement and if both request the use of a direct broadcast transmission circuit at the same time, the broadcasting organisation which was the second to make its request will use an indirect connection specially set up by interconnecting broadcasting transmission circuits and will pay a charge based on the sum of the broadcast transmission charges in respect of each of the circuits interconnected.

If a complete breakdown or a serious interruption occurs on a direct broadcast transmission circuit at the time arranged for the transmission, and if an indirect circuit passing through countries other than those through which the direct circuit passes has been set up for handling this transmission, the broadcasting organisation shall nevertheless pay the same total charge as if the direct circuit had been used ; this total charge is divided among all the countries traversed by the indirect circuit in the manner indicated in Recommendation No. 11 above, entitled " Emergency routes ".

In the case where the broadcasting organisations insist on having control circuits following the same route as the indirect broadcast transmission circuits specified above, the charge applied for the use of these control circuits is calculated on the same basis as the charge for indirect broadcast transmission circuits.

If during the course of a broadcast transmission a fault or interruption even of short duration occurs it is necessary to consider whether this fault or interruption has, depending upon the nature of the programme relayed (play, talk, high quality music, etc.) rendered the remainder of the broadcast difficult for the listeners to understand or has reduced considerably the pleasure given to the people listening to high quality music. It is necessary therefore to make a special examination each time in order to determine the corresponding rebate which should take account of the trouble actually caused (by any incidents which may have occurred) to the broadcasting organisation which receives the transmissions. It is for the Administration or private telephone operating Agency of the country in which the controlling station is situated (this is generally the terminal station nearest the broadcasting organisation which receives the transmission) to assess the reduction to be made, and the opinion of the Administration or private operating Agency should prevail over the opinion of the other Administrations or private operating Agencies concerned in the international broadcast transmission concerned. It goes without saying that it is only if the interruption or incident has been caused by a fault of the Administrations and private telephone operating Agencies that such a reduction of charge should be applied.

The charge in respect of a circuit is always indivisible and should be paid in its entirety by one broadcasting organisation.

The office responsible for coordinating all the details necessary for accounting for international broadcast transmissions :

- (1) groups all information in respect of the international broadcast transmissions supplied either by the coordinating service of its own country, or by the repeater stations (daily reports) and it verifies this information by comparing the various particulars one with the other ;

- (2) undertakes the collection of the charge from the broadcasting organisation of its own country ;

- (3) enters the international broadcast transmission on the monthly statements.

which will permit the subsequent sharing of the charge ;

(4) sends these statements every month to the accounting service responsible for actually dividing the charge between the different countries concerned.

The monthly telephone accounts exchanged between the Administrations and private telephone operating Agencies include a special statement for international broadcast transmissions, and in this special statement distinction is made between the broadcast transmissions :

- (a) over ordinary telephone circuits,
- (b) over broadcast transmission circuits of the old type,
- (c) over broadcast transmission circuits of the normal type.

The use of control circuits should also be indicated.

The personnel responsible for the supervision and charging of international broadcast transmissions in the European system should conform to the " Instruction for the personnel responsible for the supervision and charging of Broadcast transmissions in the European system " published by the C.C.I.F.

IV. — CHARGING FOR BROADCAST TRANSMISSIONS ESTABLISHED OVER EMERGENCY ROUTES

Unless other agreements have been made between the Administrations and for private telephone operating Agencies concerned, the following procedure should, in principle, be adopted for the charging of broadcast transmissions set up over an itinerary different from the normal route.

When there are no broadcast transmission circuits (on the normal route or routes used for telephone calls), and the broadcast transmission has to follow a different itinerary, the unit charge to be applied is the sum of the terminal and transit quotas claimed by the Administrations and/or private telephone operating Agencies concerned on the route and in the direction considered.

The same procedure should be adopted when a broadcast transmission is established over an itinerary different from that followed by the normal route (although special broadcast transmission circuits are available on the latter), at the express request of the broadcasting organisation, because all the broadcast transmission circuits on the normal route are occupied when the particular broadcast transmission under consideration is required.

Note. — The list of normal and emergency routes to be used for broadcast transmissions in international service in Europe or with the African or Asiatic countries which border the Mediterranean Sea has been drawn up by the " C.C.I.F. Committee for the general interconnexion Plan " in accordance with the following specimen, during its meeting at Florence in October, 1951. In working out this list, the principle has been followed that normal and emergency routes for broadcast transmissions should follow the same itineraries as the normal and emergency routes used for international telephone traffic in Europe and the Mediterranean Basin.

LIST OF NORMAL AND EMERGENCY ROUTES

to be used for broadcast transmissions in the various international relations
in Europe and the Mediterranean Basin

INTERNATIONAL RELATION	NORMAL ROUTES (with particulars of the switching points)		EMERGENCY ROUTES (with particulars of the switching points)
	Same itinerary as for telephone call	Different itinerary	

SPECIMEN OF DAILY REPORT

International Broadcast Transmissions completed on

London Exchange

SUBJECT of the broadcast transmission	CIRCUITS or sections of circuits used for the transmission		TYPE of circuits used		TIME at which circuit was		DURATION not counted (faults, interruptions etc.)	NUMBER of		UNIT charge	AMOUNT of charge	NAME of broadcasting organisation which should pay the charge or the Administration or private telephone operating Agency which should collect the charge
	from	to **)			put at disposal of broadcasting organisation	released by broadcasting organisation		chargeable minutes	chargeable units			
Concert from London broadcast by Bruxelles, Berlin, København (See following diagram)*	London	Bruxelles										

* In the case of a multiple relay using a number of circuits simultaneously, it would be advantageous to attach to the daily sheet a diagram of the multiple relay.

** The receiving broadcast stations are underlined.

ANNEX

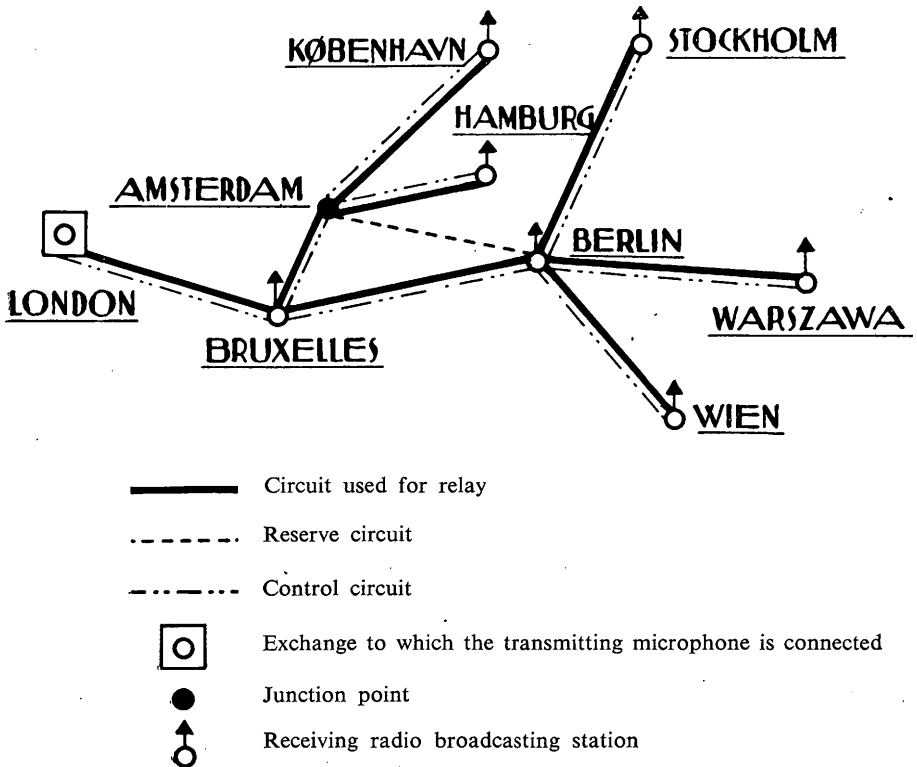
Example of a multiple broadcast relay

In the following diagram, it is supposed that the broadcasting organisation in Brussels which broadcasts the emission coming from London, pays the charge for the Brussels-London circuit ; that the broadcasting organisation in Berlin pays the charge for the Berlin-Brussels circuit, while the broadcasting organisations in Stockholm, Warsaw and Vienna pay for the Berlin-Stockholm, Berlin-Warsaw and Berlin-Vienna circuits respectively.

As Amsterdam is not broadcasting the transmission, the broadcasting organisations in Hamburg and Copenhagen should arrange in advance which organisation will pay the charge for the Brussels-Amsterdam circuit.

If, for example, the broadcasting organisation in Hamburg agrees to pay the charge for the Brussels-Amsterdam section, because Amsterdam is not broadcasting the programme, the charges to be collected in Hamburg and in Copenhagen respectively should be based on a transmission from Brussels to Hamburg and a separate transmission from Amsterdam to Copenhagen.

All the same, prior agreement between the broadcasting organisations concerned is necessary as regards payment for the control circuits and, if necessary, for the reserve circuits.



CIRCUITS	CIRCUIT ORDERED BY (i.e. broadcasting organisation to pay for circuit used)	*SPECIAL REPEATER STATIONS which should be notified if any fault occurs on the circuit
London-Brussels	Brussels.	
Brussels-Amsterdam	The broadcasting organisa- tions of Hamburg and Co- penhagen should arrange beforehand which is to pay for the Brussels- Amster- dam circuit.	
Amsterdam-Copenhagen	Copenhagen.	
Amsterdam-Hamburg	Hamburg.	
Brussels-Berlin	Berlin.	
Amsterdam-Berlin (reserve)	The broadcasting organisa- tions concerned should decide which one of them will pay for the reserve circuit Amsterdam-Berlin.	
Berlin-Stockholm.	Stockholm.	
Berlin-Warsaw	Warsaw.	
Berlin-Vienna	Vienna.	
London-Berlin (control)	Berlin.	

RECOMMENDATION No. 50

International calls using radiotelephone circuits

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 151*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1941, p. 172 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 214*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

That, in the case of a call using one or more radiotelephone circuits, the special technical operating should be carried out by the technical operators and not by the normal operating personnel.

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That, in the case where a call uses more than one international land circuit it has not yet been possible to lay down a precise rule for the nomination of the controlling exchange,

Unanimously issues the recommendation :

That, in the case where a call uses several radiotelephone circuits, the Administrations and/or private operating Agencies concerned should agree to nominate which is to be the controlling exchange ; it appears desirable, however, that the originating terminal exchange of the radiotelephone circuit should be responsible for determining the chargeable duration of the call.

RECOMMENDATION No. 51

Picture transmissions between subscribers by means of general service circuits : conditions of acceptance and charging

Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 151 ;*
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 173 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 215)*

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the majority of Administrations and private operating Agencies lack experience as regards the transmission of pictures by means of apparatus operated by Administrations or private telephone operating Agencies,

Unanimously issues the recommendation :

That it is premature to fix the charges for picture transmissions effected between telephone exchanges ;

Considering, on the other hand,

That the experience acquired by certain Administrations and private operating Agencies in respect of picture transmissions carried out by the interested parties themselves by means of apparatus owned and maintained by them and of international telephone circuits put at their disposal by the Administrations and private telephone operating Agencies, shows that these transmissions entail special expenses for the Administrations and private operating Agencies, but that there may be some compensation for these expenses if circuits are used during the non-busy hours,

Unanimously issues the recommendation :

That picture transmissions effected directly between the subscribers should be subject to the following conditions :

1. *Conditions of acceptance.* — They are admitted without limitation of duration :

(a) during hours of light traffic ;

(b) during the hours of heavy traffic except during the busiest hours (to be determined, where necessary, between the international terminal exchanges concerned) in either of the following cases :

(1) if circuits are available ;

(2) if the average delay for ordinary calls at the time specified for the picture transmission does not, as a result of this transmission, exceed or appear likely to exceed the following delays :

- fifteen minutes for circuits less than 500 kilometres in length ;
- thirty minutes for circuits between 500 and 1000 kilometres in length ;
- forty-five minutes for circuits exceeding 1000 kilometres in length ;

2. *Charging* *. — They are subject provisionally to the following charges :

(a) for the part of the picture transmission within the period of heavy traffic : at the charge laid down for ordinary telephone calls ;

(b) for the part of the picture transmission within the period of light traffic :

(1) at half ($\frac{1}{2}$) the tariff laid down for ordinary calls during the period of heavy traffic in the case of a subscription transmission or a transmission whose duration within the period of light traffic is at least one hour ;

(3) at three-fifths ($\frac{3}{5}$) of the tariff laid down for ordinary calls during the period of heavy traffic, in other cases.

The arrangements in the telephone exchanges should allow the operating personnel already responsible for determining the duration of ordinary telephone calls, to be entrusted also with the duty of determining, with the same accuracy, the chargeable duration of a picture transmission.

Where arrangements in the exchanges concerned do not permit such a procedure, technical staff responsible for setting up the connection should agree mutually to determine :

(1) the moment at which the circuit is put at the disposal of the users (beginning of the chargeable duration) ;

(2) the moment at which the circuit is released by the users (end of the chargeable duration).

When a user states that the picture received is not useable, he should, as quickly as possible inform his own telephone exchange (either by telephone, or by sending a special messenger) and this exchange should advise the international terminal

* There is at present no need to differentiate, as regards charges for picture transmissions between subscribers, between the case where a 2-wire circuit is used or where a 4-wire circuit without material modification is put at the disposal of those concerned, although such a 4-wire circuit is capable of constituting two separate channels in opposite directions ; in point of fact in the case where a 4-wire circuit is used, the Administrations or private operating Agencies would not at present be able to utilise the remaining two wires.

The International Telegraph Consultative Committee has in hand the examination of future developments of high speed facsimile apparatus.

In this connection it will be necessary to study whether it is desirable to distinguish, from the point of view of charging, between transmissions of photographs and drawings on the one hand, and transmission of texts by means of phototelegraph (facsimile) apparatus, on the other hand.

In effect, when texts are transmitted the charges applied should not lead to unfavourable competition for the telegraph services of European Administrations and/or private operating agencies.

exchange responsible for fixing the charge. Then, with as little delay as possible, the user should send to the international terminal exchange responsible for fixing the charge, the original picture and the defective proof received. If this international terminal exchange observes that there is in fact, cause to agree to a reduction, it reimburses the charge and includes, in the international accounts which it is responsible for establishing, the note : " charge not collected in consequence of defective transmission ". In this way each country concerned automatically bears its part of the authorised reimbursement.

To obtain this result, it is obviously necessary that, when an international terminal exchange has stated that a reduction should be granted, it advises the accounting service giving all information necessary to identify the picture transmission in question.

It is true that Article 70 § 3 (3) of the International Telegraph Regulations (Paris Revision, 1949) says " When a transmission between private stations is defective through interruption of the telephone circuit or when it has failed to take place, the charge may be reimbursed in accordance with the conditions laid down in the International Telephone Regulations ". However the International Telephone Regulations only provide for incidents and difficulties of reception during the course of an international telephone conversation. There is no specific provision for the case of picture transmissions. But the two cases are very different ; in fact, when difficulties in reception appear during the course of a telephone conversation, it is always possible for one if not both of the subscribers to call an international operator into the line in order to report the difficulties in reception which will then be taken into account when assessing the chargeable duration of the call, and it can be said that every country concerned will thus give up its quota of the charge for the non-chargeable time or, what amounts to the same thing, reduce its charge. On the contrary, when it is a question of a picture transmission, the investigation of the difficulties of reception can only be instituted after the event, by comparison of the picture received with the original transmitted. It would be illogical that only the accounting administration or private operating agency preparing the account should bear the reimbursement when it is, in fact, established that the bad quality of the picture received has been caused by the telephone service.

Attention should be drawn to the opportunity of modifying Article 70 of the International Telegraph Regulations with regard to this subject at the time of the next International Telephone and Telegraph Administrative Conference.

Note. — It is recommended that transit Administrations and private operating Agencies should facilitate transmission tests requested by terminal Administrations and private operating Agencies, on the understanding that these tests are subject to the charges indicated above.

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering finally,

That cases may exist where the picture transmission between two countries will be effected by connecting over a telephone circuit an apparatus owned by a user and maintained by him to an apparatus situated in a telephone exchange in another country and owned by the Administration or private operating Agency in that country,

Unanimously issues the recommendation :

That, in these cases, the use of the international circuit should be allowed under the same conditions and subject to the same charges (so far as the international circuit is concerned) as those specified above for transmission between two private equipments, the Administration or private operating Agency which operates the exchange equipment collecting, from the subscriber who uses it, a supplementary charge, the amount of which does not appear in the international accounts.

RECOMMENDATION No. 52

No-reply from the calling or called subscriber

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 153*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 175 and*
Yellow Book, *Volume I ter XVIth P.A., Florence 1951, p. 218*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to define more precisely the optional provision laid down in Article 49, § 7 (3) of the International Telephone Regulations (Paris Revision, 1949) relating to the collection (in case of no-reply from the calling station when it is rung to take the call, or in the case of no-reply from the called station when it is rung either to receive a préavis or to take a préavis call) of a charge equal to that in respect of one minute of ordinary conversation exchanged during the charge period in which the no-reply took place (whether an urgent or an ordinary call is concerned),

Unanimously issues the recommendation :

1. That, in case of no-reply from the caller at the moment when he is called by his exchange to take the call, a charge should be applied equal to that for one minute of ordinary conversation exchanged during the period in which the no-reply occurred.
2. That for fixed time calls, in case of no-reply from the caller at the moment he is called by his exchange to take the call (final call) only the charge applicable to one minute of ordinary conversation exchanged during the charge period in which the no-reply occurred, should be made.
3. That, for préavis, avis d'appel or collect calls only the supplementary charge in respect of the préavis, the avis d'appel or the collect call is applied when the call could not take place owing to no-reply from the caller or the called subscriber ; in the case of a préavis call, when the préavis has been transmitted but has not been received by the called station because this station did not reply to the call, the surcharge in respect of the préavis is nevertheless collected.
4. That when a call requested without avis d'appel to a public call office is concerned and if this call could not take place, the charge in respect of one minute of ordinary conversation exchanged during the charge period in which the caller was advised that the call could not take place, is applied.

RECOMMENDATION No. 54

Standardisation of the hours of light traffic for the purpose of application of charges

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 155*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 177 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 219*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

1. That the hours adopted by all Administrations and private operating Agencies as limits between periods of heavy traffic and periods of light traffic should be uniform ;
2. That the times uniformly adopted for these limits should be 7 p.m. and 8 a.m. (legal time in the country of origin).

RECOMMENDATION No. 55

Allowances and equipment for timing the duration of calls

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 156*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 177 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 220*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the method of charging minute by minute after the first unit of conversation (RTf. Article 31) is more favourable to the subscribers than the old methods of charging for which, in practice, an allowance was made,

Unanimously issues the recommendation :

That, in assessing the chargeable duration of calls, the provisions of Article 30 of the International Telephone Regulations (Paris Revision, 1949) should be strictly applied, no tolerance being allowed in assessing this duration ;

That Administrations and private operating Agencies should be recommended to adopt equipment for timing the duration of calls, the degree of accuracy of which should, as near as possible, be the same.

RECOMMENDATION No. 56

Recording the chargeable duration of calls

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 156*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 178 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 220*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is desirable to avoid any complications in the operating of the service ;

That, according to the terms of Article 30 (§ 7 (2)) of the International Telephone Regulations (Paris Revision, 1949), after each call the operators of the

international terminal exchanges (in the case of advance preparation working and if the Administrations and/or private operating Agencies have so decided) should agree together the duration of this call, and that it is accordingly necessary to avoid that the operator in one of these exchanges should be bound by an indication of this duration having previously been given to the subscriber on her system,

Unanimously issues the recommendation :

That it is unnecessary to inform the person making an international call of the exact moment at which the charge begins ;

That an Administration or private operating Agency should not give its operators instructions to advise to subscribers the passage of 3 and 6 minute periods unless a prior agreement to this effect has been reached with the other Administrations or private operating Agencies concerned ;

That, nevertheless, if some Administrations or private operating Agencies consider it desirable to advise callers of the expiry of each period of three minutes, it is the responsibility of the operator at the originating terminal exchange to start, at the beginning of the call, an apparatus designed to advise the caller of the expiry of each period of three minutes, provided this does not entail excessive expenditure and on condition that this signal is regarded merely as an advice not binding on the Administration or private operating Agency as regards charging ;

That although in many international terminal exchanges the use of a clock controlling the timing apparatus has given satisfactory results, it seems unnecessary to make such arrangements general provided all suitable measures have been taken to ensure that the timing apparatus functions regularly and does not show any prejudicial differences of speed ;

That it is not necessary to enter the time of the beginning and end of calls on tickets by means of costly printing apparatus, provided that recording these particulars in manuscript does not cause any inconvenience.

RECOMMENDATION No. 57

Defaulting subscribers

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 157*
Yellow Book, *Volume I bis, 15th P.A., Paris 1949, p. 179 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 221*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is in the interest of Administrations and private telephone operating Agencies to know of telephone subscribers coming from a country where they have not settled their telephone accounts, and also to render each other assistance in the recovery of amounts due from such debtors,

Considering, on the other hand,

That in view of the differences in the law in different countries it would be very difficult to regulate this assistance,

Unanimously issues the recommendation :

That when a telephone subscriber has left the country in which he was a subscriber without settling his telephone account, and has taken up residence in another country which is known, the Administration or private operating Agency of the country of origin should advise the Administration or private operating Agency in the other country and ask this latter, on a reciprocal basis, to take such steps or make such arrangements as it thinks fit to obtain payment of the accounts outstanding.

RECOMMENDATION No. 58

Publicity expenses

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 158*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 179 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 222*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the terminal Administrations or private operating Agencies are both equally interested in the growth of traffic ;

That, on the other hand, it is important to avoid complications in the preparation of the international accounts,

Unanimously issues the recommendation :

That there is no case for admitting that a terminal Administration or private operating Agency should receive a higher quota for outgoing calls than for incoming calls in order to take into account its expenses for publicity (canvassing).

RECOMMENDATION No. 59 (New-Recommendation)

(replacing former Recommendation No. 59 "Accounting"
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 222*)

Checking of monthly telephone accounts

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the Administration of the incoming country ought to be able to secure information permitting a check to be made by sampling, of the traffic shown in the international accounts furnished by the Administration of origin, in manual (rapid service) operation and in semi-automatic operation,

Unanimously issues the recommendation :

That the Administration of destination proceeds (with moderation), from time to time, to listen to several calls taken by chance, and determine for each of them the direction concerned, the time, the called subscriber's number and possibly the identity of the caller (the three first items can be obtained in the semi-automatic service as in the manual service),

That, this done, the Administration of destination asks the originating Administration (before noon on the following day) to indicate for each of the calls, the chargeable duration entered on the call tickets,

Considering, moreover,

That it is desirable that the incoming countries can, if they wish, on the basis of their incoming traffic, make a temporary check of the monthly accounts established by the Administration or private operating Agency of the country of origin (RTf., Article 50),

Unanimously issues the recommendation :

That Administrations and/or private telephone operating Agencies use the following standard type of form for the establishment of the monthly international account ; this form being sufficiently detailed to allow the countries of destination the possibility of making, after an examination of the incoming traffic, a comparison with the information given by the outgoing international terminal exchange during a certain period. This form could, in addition, be useful not only for the accounting services but also for the establishment of international telephone traffic statistics,

Considering lastly,

That it is necessary to envisage, for the letter accompanying such forms, a different wording from that used for sending the accounts for verification and approval to terminal Administrations and/or private operating Agencies—or to transit Administrations or private operating Agencies after acceptance by the terminal office,

Unanimously issues the recommendation,

That the elements of the covering letter should not be printed at the top of the following standard form.

**SPECIMEN FORM FOR THE ESTABLISHMENT
OF MONTHLY INTERNATIONAL ACCOUNTS**

TELEPHONE ACCOUNT

Service

Month

Charge zones	Categories of calls	Number			Credits of (Administration)		Credits of (Administration)	
		of calls of each Category	of minutes of chargeable conversation	of corresponding charge units	Quota	Total	Quota	Total

Explanatory notes

Each form concerns one telephone route between a country of origin and a country of destination. The form is composed of the following columns :

1st column : charge zones of the country of destination ;

2nd column : categories of calls ;

In this 2nd column, there is need to enter in the following order : the traffic disposed of by normal, auxiliary and emergency routes.

- Ordinary calls (distress, Government and private) ;
- Urgent calls (Government, private) ;
- “ Lightning ” calls (Government, private) ;
- Subscription calls ;
- Supplementary charges for *préavis* ;
- Supplementary charges for *avis d'appel* ;
- Supplementary charges for Occasional Fixed-Time calls ;
- Supplementary charges for Collect calls ;
- other supplementary charges (including where necessary requests for information) ;
- express charges ;
- broadcast transmissions :

(a) on ordinary telephone circuit ;

(b) on old type circuit ;

(c) on normal type circuit ;

(d) the use of a control circuit ;

- picture transmissions.

The following columns include :

- the number of calls of each category ;
- the number of minutes of chargeable conversation ;
- the corresponding number of charge units.

The figures to be included in the column “ corresponding charge units ” should, before being entered, be converted when necessary in ordinary charge units at the ordinary rate. They are then totalled for each charge zone, and it is the total which should be used for the completion (on the same line) of the columns relative to the “ Credits of the various administrations ”.

It should be noted that for the calculation of the total surcharge applied to broadcast transmission circuits the fractions of minutes (or thirds of a “ Unit ”) are when necessary, ignored.

The following columns indicate the credits of the various offices (quotas and total amounts). There are as many columns “ credits of (Administration) ” as there are countries concerned for traffic passed over normal, auxiliary and emergency routes.

No distinction has been made above between periods of heavy and light traffic, because there is at present, in Europe, no distinction between these two periods. If this distinction should be resumed, it would be expedient, in accordance with Article 50, § 3 of the International Telephone Regulations, (Paris Revision, 1949) that the account should show the number of calls and chargeable minutes for each period of charge separately.

The form does not however include charges in respect of frontier services, as it is the present practice not to enter these calls in the international accounts.

E. TRAFFIC STATISTICS AND DOCUMENTATION

RECOMMENDATION No. 60

European international telephone traffic statistics

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 159*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 180 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 225*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is of interest to the Administrations and private telephone operating Agencies in one part of Europe to have some representative statistics concerning the quality of the international telephone service in other parts of Europe, so that they can make comparisons and, later on, study in greater detail the methods adopted in certain services between countries situated in these other parts of Europe ;

Unanimously issues the recommendation :

That Administrations and private telephone operating Agencies in Europe should forward to the Secretariat of the C.C.I.F. in the month of December in each year, the necessary statistics for the compilation, in accordance with the directives given below, of the "European International Telephone Traffic Statistics", which are intended only for European Administrations and private operating Agencies.

Directives for the compilation of European International Telephone Traffic Statistics

The Telephone Administrations and private operating Agencies of Europe will be asked to forward to the Secretariat of the C.C.I.F. among the statistics which they normally collect, those which are fully representative of the quality of the service and which are likely to interest the other European Administrations or private operating Agencies.

It is desirable that the statistics sent to the C.C.I.F. should be extracted from the call tickets themselves (and not from dummy tickets). The following procedure should be adopted :

On a certain number of working days each year, and on at least one working day per quarter, an abstract will be prepared of the call tickets (traffic from or to terminal zones only) for services between European capitals or the other most important European towns connected by direct circuits.

On these call tickets will be shown the actual delay experienced by the calling subscriber, that is the interval of time between the moment of booking the call (time shown on the ticket) and the beginning of the chargeable duration of the call.

These delays will not include any delay attributable either to the calling or the called subscriber (for example, on certain *préavis* calls, on fixed time calls, on calls whose completion has been deferred at the request of the caller etc.).

It is desirable in order to enable comparison to be made to indicate, if possible, the following information :

1. What is the average daily number of *outgoing* (or *outgoing transit*) call minutes exchanged in the relation considered from the country in question ?

2. (a) What is the number of international circuits in service in each of the following categories in the relation considered :

- manual outgoing circuits,
- manual incoming circuits,
- manual bothway circuits,
- semi-automatic outgoing circuits,
- semi-automatic incoming circuits.

(b) What is the total number of international circuits in service in the relation concerned ?

3. What are the busiest hours in each day and what is the percentage of the number of calls in the busy hours in relation to the total number of calls in the period of 24 hours ?

What is the percentage of the number of bookings made during the two consecutive busiest hours and during the hour which precedes these busy hours on a working day other than Saturday, in relation to the total number of bookings in the period of 24 hours ?

4. What are the percentages of calls exchanged during the two consecutive busiest hours on a working day other than Saturday on which the caller experienced a delay (defined as under) :

- (a) of less than or equal to 5 minutes ?
- (b) of between 5 and 10 minutes ?
- (c) of between 10 and 20 minutes ?
- (d) of 20 minutes or more ?

These particulars should be in respect of the services between European capitals or large towns connected by direct circuits (calls from or to the terminal traffic zone).

RECOMMENDATION No. 61

Publication of the General Telephone Statistics by the General Secretariat of the International Telecommunication Union

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 161*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 182 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence, 1951, p. 227*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Unanimously issues the recommendation :

1. That the General Telephone Statistics should be published each year by the General Secretariat of the International Telecommunication Union in the form indicated in the following table ;

2. That the Administrations and private telephone operating Agencies should furnish the information as quickly as possible to the General Secretariat of the International Telecommunication Union in order that the relative statistics for a given year may be published at the latest by the 1st August of the following year.

Specimen form for the General Telephone Statistics

I. Population of country according to last census	
II. Area of country in square kilometres	
III. Number of telephone exchanges in operation : (1)*	
(1) Automatic exchanges	
(2) Semi-automatic exchanges	
(3) Manual exchanges	
TOTAL number of telephone exchanges	<hr/>
IV. Number of subscriber lines in operation : (2)	
(1) Subscriber lines directly connected to automatic exchanges	
(2) Subscriber lines directly connected to semi-automatic exchanges	
(3) Subscriber lines directly connected to manual exchanges	
TOTAL number of subscriber lines	<hr/>
V. Number of stations in operation :	
(1) Private stations (including supplementary and service stations) (3)	
(2) Public stations (4)	
TOTAL number of stations	<hr/>
VI. Number of trunk and international circuits in operation :	
(1) Total number of internal telephone circuits (total of physical, phantom and carrier circuits added together)	
(2) Total number of international telephone circuits (total of physical, phantom and carrier circuits added together)	

* The figures between brackets refer to the explanatory notes at the end.

- (3) Total length in kilometres of open wire circuits (internal and international) : (5)
 - (a) physical circuits
 - (b) phantom circuits
 - (c) carrier circuits
- (4) Total length in kilometres of overhead or underground cable telephone circuits (internal and international)
 - (a) two-wire physical circuits
 - (b) four-wire physical circuits.
 - (c) phantom circuits (two or four-wire) . . .
 - (d) carrier circuits
- (5) Total length in kilometres of submarine cable circuits (internal and international) : (6)
 - (a) two-wire physical circuits
 - (b) four-wire physical circuits.
 - (c) phantom circuits (two or four-wire) . . .
 - (d) carrier circuits

VII. Traffic :

- (1) Local traffic :
 - (a) number of calls (regardless of duration) from subscriber stations
 - (b) number of calls (regardless of duration) from public stations

TOTAL number of local calls _____
- (2) Trunk traffic :
 - (a) number of chargeable minutes of conversation :
 - α) during periods of heavy traffic . . .
 - β) during periods of light traffic

TOTAL _____
 - (b) number of chargeable calls (regardless of duration) :
 - ordinary private (7)
 - urgent
 - lightning
 - distress
 - reversed charge
 - subscription
 - fixed-time
 - broadcast transmissions (sound broadcasting) (8)
 - collective
 - picture transmissions between private stations

TOTAL _____

- (c) Number of préavis (including those not followed by calls)
 Number of avis d'appel (including those not followed by calls)

(3) International traffic (outgoing, incoming and transit (9) :

- (a) total number of chargeable minutes of conversation :
 α) during period of heavy traffic :
 terminal traffic (outgoing and incoming transit traffic (9)
 β) during period of light traffic :
 terminal traffic (outgoing and incoming transit traffic (9)
 TOTAL
 (b) Number of chargeable calls (regardless of duration) not including transit traffic :
 ordinary private (7)
 urgent
 lightning
 distress
 reversed charge
 subscription
 fixed-time
 broadcast transmissions (sound broadcasting) (10)
 collective
 picture transmissions between private stations
 TOTAL
 (c) number of préavis and avis d'appel, not including transit traffic :
 number of préavis (including those not followed by calls)
 number of avis d'appel (including those not followed by calls)
 TOTAL

VIII. Total gross expenditure in gold francs of the internal and international telephone services, including payment of interest on capital invested and depreciation of equipment (optional) gold fr.

IX. Total gross income in gold francs of the internal and international telephone services gold fr.

Explanatory notes

1. By telephone exchange is meant an automatic, semi-automatic or manual installation to which subscribers are connected, and which is operated by an Administration or private operating agency.

2. In the number of subscribers' lines include lines connecting service and public telephone stations with the central exchange.

3. Private telephone stations which cannot be connected with the general telephone network are not to be included among subscribers' stations.

4. All telephone stations put at the disposal of the public by Administrations or private operating agencies constitute public stations.

5. The length of a telephone circuit (see recommendation No. 1 § 7, above) is the length of the route followed by the conducting wires which form the circuit or are used for the circuit, i.e. the simple distance between the terminal exchanges measures along the actual route taken.

6. Where a submarine cable belongs to two Administrations or private operating Agencies, these Administrations or private operating Agencies should indicate in their statistical data only the length of that section of the cable which belongs to them.

7. No other categories of calls should be entered under this heading. If it is impossible to enumerate separately every category of call, this fact should be stated.

8. In internal trunk traffic, each broadcast transmission, whether it be received and broadcast by one or by several stations, should count as one unit only.

9. By transit traffic is meant the total number of chargeable minutes of calls passed in transit through the country in question with the actual intervention of an international terminal exchange situated within the territory of that country. Calls transmitted by a direct circuit over the territory of the country in question and set up without the intervention of an international terminal exchange within such a country should not be regarded as transit traffic.

10. In international traffic, every country participating in a broadcast transmission, by the transmitting station or by one or more receiving stations, or as transit country, should record one unit.

If the transmission is intercepted within the transit country by one or more receiving stations, it should still be regarded by that country as an international broadcast transmission, and should not, therefore, figure in the statistics of internal traffic.

If a broadcast is transmitted in both the internal service and the international service, it must be recorded by the country of origin both as internal trunk traffic and as international traffic.

If the source of a broadcast is changed during transmission, each change shall be entered in the statistics as a new transmission.

RECOMMENDATION No. 62

Observations on the international telephony service

(Yellow Book, *Volume I, XIVth P.A., Montreux, 1946, p. 166*;
Yellow Book, *Volume I bis, XVth P.A., Paris, 1949, p. 186* and
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 231*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it is essential that observations on international telephone traffic on the principal circuits should be carried out simultaneously at both ends of the circuit in order to confirm that the circuits and plant are in good working order, to supervise the work of the operators, to ascertain to what extent users cooperate with telephone Administrations and private operating Agencies and to improve, where necessary, the quality of the service,

Unanimously issues the recommendation :

1. That observations should be taken at regular intervals on the principal international circuits, for example once a month during one of the busy hours, these observations being made, unknown to the operators who are being observed, by means of a high-impedance set, in order to observe not only what is happening on the circuit but also at the operating positions ;

2. That the exchange superintendents concerned should arrange by telegram or letter that these observations are carried out simultaneously at both ends of the circuit, the responsibility for initiating the arrangement falling on the exchange which is first in alphabetical order ;

3. That in order to record the results of these observations the specimen form reproduced below should be used ;

4. That the exchange superintendents should, without delay, send each other a copy of each schedule containing the results of the observations.

A schedule should not contain particulars of a call already in progress at the beginning of the period of observations ; on the other hand it should include all the particulars in respect of the last call begun before the end of the period of observations.

The schedule should, in addition, contain information about any irregularities revealed, for example, wrong number, disconnection in error, third subscriber on the line, charging error, lack of attention by the controlling operator, use of phrases other than those contained in the list issued by the C.C.I.F., etc... in order to allow investigation to be made where necessary.

SCHEDULE

for recording results of the observations on the international telephone circuits *

NAME OF INTERNATIONAL TERMINAL EXCHANGE			DESIGNATION OF CIRCUIT			DESIGNATION OF THE OTHER CIRCUITS ON THE POSITION						
..... (a)		 (b)		 (c)						
TIME of commencement of operations to establish each call	CALLING Exchange	EXCHANGE and Number of called subscriber	TIME ELAPSED FROM THE END OF THE AGREEMENT regarding the chargeable duration of the preceding call until :									TIME during which the circuit is not in use
			The ring from one of the inter- national terminal exchanges	The reply from the distant inter- national terminal exchange	The end of the conver- sation	The time when the interna- tional terminal exchange of the controlling country is connec- ted to the subscriber		The beginning	The end	The end of the agreement regarding the chargeable duration	The final abandon- ment of incomplete bookings : no reply, engaged, wrong number etc.	
1	2	3	4	5	6	7	8	9	10	11	12	13

* See the following page for the remainder of this schedule.

SCHEDULE
for recording results of the observations on the international telephone circuits

NAMES:		Of the Section Supervisor Of the Operator under observation (d)						Date and time of beginning of the observations (e)			
		SUMMARY							CHARGEABLE DURATION according to		REMARKS State briefly the causes of the time lost (deducting column 6 from column 7 or 8) Example : Mistake in preparation, caller does not speak, waited for through connexion beyond route terminal; transmission of service particulars for other calls etc. Note also, as appropriate, cases of late entry on the circuits for check of duration.
		TIME to be deducted on account of bad transmission interruption etc.	Chargeable duration [difference (10-9) — 14]	Duration of the various operations of the call corresponding to the difference between columns :					Total duration of operations (16+17+18+19+20)	The observer	
14	15	(5-4) 16	(6-5) 17	(9-6) 18	(11-10) 19	(12-6) 20	21	22	23	24	

Information concerning the compilation of the schedule of pages 128—129

- COLUMN 1. Approximate time permitting each call under observation to be identified.
- COLUMN 4. The time of commencement of the first observation whether at the time the circuit is put under observation or, if a call is in progress at that moment, at the end of the agreement regarding the chargeable duration of that call.
- COLUMN 10. Overall duration of the call including, where appropriate, the total period not chargeable (Column 14).
- COLUMN 22. Time to be expressed in whole minutes on the basis of the figures in column 15.

RECOMMENDATION No. 62 bis (New Recommendation)

Statistics of circuit out-of-service times

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the taking of statistics of circuit out-of-service times for the purpose of being exchanged regularly between Administrations by means of a standard form entails work out of all proportion to the object in view :

Unanimously issues the recommendation :

That it is desirable to leave to the care of the technical services of each Administration or private telephone operating Agency, and especially to controlling repeater stations, the supervision of the quality of performance of circuits using methods judged to be best adapted to their national organisation to this end, for example by using an individual ticket indicating the faults for each circuit,

That Administrations or private telephone operating Agencies should carefully keep up to date documents relating to the supervision of circuits in order to have available all the necessary information to reveal unduly long circuit out-of-service times. Such situations should be treated on the merits of each particular case, either by correspondence or by telephone with a view to agreeing the steps to be taken to remedy abnormalities.

RECOMMENDATION No. 63

Determination of the number of circuits necessary to carry a given traffic in manual operation

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 169*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 187 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 235*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

After having studied the basis for determining the number of circuits necessary to carry a given traffic as well as the criterion of the quality of service to be adopted,

Unanimously issues the recommendation :

That in present circumstances, the quality of an international rapid service should be defined as the percentage of bookings which, during the average busy hour (as defined later under 3), cannot be satisfied immediately because no circuit is free in the relation considered.

1. By "bookings satisfied immediately" is meant those for which the call is established by the same operator who received the call, and within a period of two minutes from receipt of that call, whether the operator (when she does not immediately find a free circuit) continues observation of the group of circuits, or whether she makes several attempts in the course of this period.

Ultimately, it will be desirable to evolve a corresponding definition based on the "average speed" of establishing calls in the busy hour, that is to say the average time which elapses between the moment when the operator has completed the booking of the call and the moment when the called subscriber is on the line, or the caller receives the advice "subscriber engaged", "no reply", etc. But for the moment, in the absence of information about the operating time in the European international service, such a definition cannot be established.

2. The number of circuits it is necessary to allocate to an international relation, in order to obtain a given quality of service, should be determined as a function of the "total holding time" of the group in the busy hour.

The total holding time is the product of the number of calls in the busy hour, and a factor which is the sum of the average call duration and the average operating time.

These durations will be obtained by means of a large number of observations made during the busy hours, by agreement between the Administrations and/or private operating Agencies concerned. If necessary, the particulars entered on the tickets could also serve to determine the average duration of the calls.

The average call duration will be obtained by dividing the total number of minutes of conversation recorded by the recorded number of effective calls.

The average operating time will be obtained by dividing the total number of minutes given to operating (including ineffective calls) by the number of effective calls recorded.

3. The number of calls in the busy hour will be determined from the average of returns taken during the busy hours on a certain number of busy days in the year.

Exceptionally busy days, such as those which occur around certain holidays etc., will be eliminated from these returns. The Administrations and/or private operating Agencies concerned should plan, whenever possible, to put additional circuits into service for these days.

In principle, these returns will be taken during the working days of two consecutive weeks, or during ten consecutive working days. If the monthly traffic curve shows only small variations they will be repeated twice a year only. They will be taken three, or four times a year or more, if there are material seasonal variations, so that the average established is in accordance with all the characteristic periods of traffic intensity.

4. The total occupied time thus determined should be increased by a certain amount, determined by agreement between the Administrations and/or private operating Agencies concerned according to the statistics of traffic growth during earlier years, to take account of the probable growth in traffic and the fact that the putting into service of new circuits suffers a certain delay from the time when this is recognised as being necessary.

5. The total holding time of the circuits thus obtained, in conjunction with a suitable table (see below), will enable the required number of circuits to be ascertained.

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the establishment of a mathematical formula for the determination of the number of circuits necessary to carry a given traffic would be difficult because of the large numbers of factors affecting this question, and that, moreover, such a formula could serve only for theoretical calculations without practical value,

Considering, moreover,

That tables for determining the number of circuits as a function of the traffic to be carried have received the sanction of experience in the internal services of various countries for several years,

Unanimously issues the recommendation :

That, in the European international telephone service, the following tables A and B should be used as a basis of allocation :

In the present state of the international network table A will generally be applicable if the international service is to remain profitable. According to the theoretical calculations and the experimental results obtained by various Administrations which have acquired considerable experience of the rapid service in their internal service, table A corresponds to about 30% of calls failing at the first attempt because of all circuits being engaged and to about 20% of the calls being deferred.

However, it is recommended that whenever possible—for example if the number of circuits can be economically and liberally increased when carrier current symmetrical pair cables or coaxial cables are put into service—the conditions of table B should be met, corresponding to about 7% of calls deferred.

These tables do not take account of the fact that the possibility of using auxiliary routes permits, particularly for small groups, an increase in the permissible occupation time. In practice such routes are very rare in the international service.

Circuit capacity tables

NUMBER of circuits	TABLE A		TABLE B	
	Percentage of circuit usage (C.C.I.F. definition, Recommendation No. 1, § 18)	Minutes of circuit usage possible in the busy hour	Percentage circuit usage (C.C.I.F. definition, Recommendation No. 1, § 18)	Minutes of circuit usage possible in the busy hour
1	65.0	39	—	—
2	76.7	92	46.6	56
3	83.3	150	56.7	102
4	86.7	208	63.3	152
5	88.6	266	68.3	205
6	90.0	324	72.0	259
7	91.0	382	74.5	313
8	91.7	440	76.5	367
9	92.2	498	78.0	421
10	92.6	556	79.2	475
11	93.0	614	80.1	529
12	93.4	672	81.0	583
13	93.6	730	81.7	637
14	93.9	788	82.3	691
15	94.1	846	82.8	745
16	94.2	904	83.2	799
17	94.3	962	83.6	853
18	94.4	1 020	83.9	907
19	94.5	1 078	84.2	961
20	94.6	1 136	84.6	1 015

Note. — Tables A and B can be extended for groups comprising more than 20 circuits by using multiples of the values given for 20 circuits.

RECOMMENDATION No. 63 bis (New recommendation)

Determination of the number of circuits necessary to carry a given traffic in semi-automatic operation

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the tables A and B mentioned in Recommendation No. 63 were established principally for the calculation of the number of manually operated circuits,

That for reasons of uniformity and convenience it is preferable, to determine the number of circuits required to carry a given traffic in semi-automatic operation,

to refer to a formula which is widely used and for which there exist easily obtainable tables and curves,

Unanimously issues the recommendation :

That, to determine the number of circuits necessary in the case of semi-automatic operation, Administrations and private operating Agencies use, as a basis of calculation, the classic formula of Erlang (see the following table and associated graph giving, for the loss probabilities of 3 % and 5 %, the number of circuits corresponding to a given traffic).

That they adopt for each of the cases envisaged the loss probabilities defined below.

That nevertheless too rigorous a value should not be attached to these loss probabilities because with semi-automatic operation assisted by operators who exercise a smoothing influence, it is not possible to determine precisely (by a simple mathematical formula) the number of circuits as a function of a loss probability. Moreover, the conditions in which calls which fail (because of lack of circuits) are later completed, are more or less beyond the hypotheses upon which the Erlang formula is based. These values, recommended for adoption for the " loss probability ", should rather be considered as serving to determine the value of the parameter p indicating the column of the numerical table or the curve it is desirable to use.

1st case. — Direct routes without the possibility of using secondary routes and used solely for terminal traffic.

The table or the graph corresponding to a value of the parameter p (loss probability) equal to 5 % will be used.

However, in the case where the operators have direct access to the international circuits, or access by means of automatic switches or by selectors which search continuously for a certain time, table B (Recommendation No. 63) can provisionally continue to be accepted for use in determining the number of circuits necessary to carry a given traffic ; the numbers in this table approximate sufficiently closely to a loss probability of 5 %.

2nd case. — Route on which it is necessary to pass through a transit centre without the possibility of using secondary routes.

The table or the graph corresponding to a value of the parameter p (loss probability) equal to 3 % will be used for each of the groups of circuits constituting a link in the international route.

3rd case. — Direct routes (without the possibility of using secondary routes) for which there exist concurrently:

- a group of circuits used for terminal traffic, and
- a group of circuits used for transit traffic (with overflow from the first group to the second).

In this case it is not possible to define a perfect mathematical solution for calculating the number of circuits required. Simply for information the following

complementary note indicates two possible methods of satisfactorily determining the number of circuits required.

Complementary Note

The first method has been used by certain Administrations and has given them satisfaction : it leads to estimates based upon rapid but not very precise calculations.

The second method is used by the Swedish Administration for the more general problem of determining the number of circuits necessary in the hypothesis of routing via secondary routes ; the case here studied represents only a particular application of this method. It has the advantage of having been submitted by this Administration to systematic verification by means of traffic recorders. In comparing the loss probability taken as a basis of calculation and the loss probability obtained on the traffic recorder with the number of circuits determined by this method, the Swedish Administration has established that there is no practical difference between the results of this method and a perfectly accurate one. It should be noted that the second method can be specially useful in the following case : the value of the terminal traffic ought in general to be greater in comparison with the traffic routed over the transit group and the overflow traffic (which is not pure chance) can be of a volume equal to or greater than the traffic normally carried on the transit group.

Notations

- Let G_1 = the group used for terminal traffic
 G_2 = the group used for the transit traffic and for the traffic overflowing from group G_1
 T_{terminal} = the volume of terminal traffic
 T_{transit} = the volume of transit traffic
 n_1 = the number of circuits in group G_1
 n_2 = the number of circuits in group G_2
 x = the percentage of traffic T_1 which will overflow on to the circuits in group G_2 (x thus represents a loss probability for the circuits in group G_1).

1st method. — $n_1 + n_2$ = the total number of circuits (groups G_1 and G_2 in the route considered).

2nd method. — $E_1, N(y)$ = loss probability for a traffic carried on N circuits (following Erlang's formula) *

* (E_1, \dots = classical notation for Erlang's first formula).

1st method

When the percentage of overflow x is made to vary between the small value p corresponding to the loss probability admitted for the circuits in group G_1 and 100%, the number n_1 of circuits can be calculated, as a function of x , by means of the Erlang formula (by accepting the validity of applying this formula, which can be disputed especially when the overflow, that is to say the loss probability of the

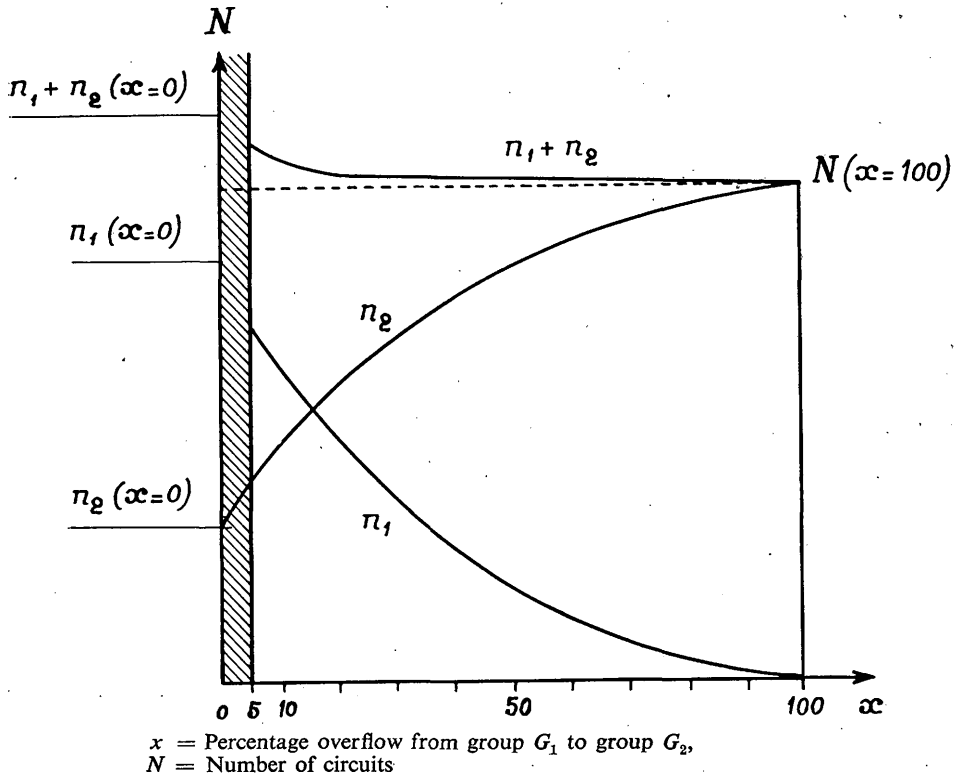
circuits in group G_1 attains a high percentage). The number $n_2 = f_2(x)$ cannot be accurately determined because the traffic offered on the circuits of group G_2 results from addition of pure chance traffic to overflow traffic which is not pure chance. Nevertheless, account can be taken of the general form of the curve $n_2 = f_2(x)$.

The curve giving the total number of circuits $n_1 + n_2$ as a function of x also cannot be determined accurately, but its point of departure for $x = 0$ and its point of arrival for $x = 100\%$ are known. In general, and abstracting the interval of variation of x between 0 and p which has not to be considered, this curve decreases very rapidly at the beginning and quickly becomes nearly horizontal to the point corresponding to $x = 100\%$, for values of overflow which are already relatively small.

In other words apart from a certain value (relatively small), the overflow leads almost to the same number of circuits as would be obtained with a single group. The overflow can have appreciable economic advantage; in fact, although the number of circuits remains about the same as it would be when the two groups G_1 and G_2 were combined, it is possible to have the circuits of two different qualities.

Note. — Overflow is not recommended in the case where the traffic T_{transit} is very small compared with the traffic T_{terminal} unless in all cases some circuits are reserved exclusively for the transit traffic.

When these conditions are fulfilled, the method for determining the number of circuits in groups G_1 and G_2 can be as follows:



Approximate method of calculating the number of circuits in groups G_1 and G_2

[In order to facilitate agreements between Administrations a loss probability of 5% is admitted (in these calculations according to the Erlang formula)].

First of all the number of circuits for the traffic which should normally be carried (without overflow) by group G_2 is calculated, being n_2 (for $x = 0$). This number is increased by a certain percentage which will depend essentially on the relationship between the number of circuits in groups G_1 and G_2 when there is no overflow.

Then the number of circuits N is determined on the hypothesis that there would be a single group having to carry both the corresponding traffics of the two groups considered. The number n_1 of the circuits for group G_1 (overflowing on to group G_2) is then obtained from the difference between N and n_2 .

The following verification is then advised :

Having predetermined the number of circuits of group G_1 which will overflow, the value of the overflow traffic can be deduced. This traffic is not pure chance traffic and strictly cannot be added to the traffic T_{transit} in order to deduce, by applying probability curves, the number of circuits for group G_2 . In acting in this way an error by default would be committed. However, for the purposes of verification, it is suggested that this calculation be proceeded with, in order to verify if the number of circuits by which group G_2 has been increased is satisfactory.

2nd method

The description of the 2nd method and its basis is given in Annex No. 1 to Question No. 3 of the 6th Study Group studied in 1955/1957 relating to the calculation of the number of circuits in the case of overflow.

In the case here envisaged it is necessary to consider the number of circuits usable solely for terminal traffic (group G_1), as information given in the problem (as well, in consequence, as the overflow of traffic from this group of circuits).

The number of circuits in group G_2 used both for transit traffic and for the terminal traffic which overflows is then determined as a function of the loss probability p adopted for the transit traffic. The loss probability for the terminal traffic will be less than p .

The number of circuits in group G_2 will be determined by the formula :

$$\frac{T_{\text{terminal}} + T_{\text{transit}} - (T_{\text{terminal}} + T_{\text{transit}}) E_{1, N-n_2} (T_{\text{terminal}} + T_{\text{transit}})}{T_{\text{terminal}} - T_{\text{terminal}} E_{1, n_1} (T_{\text{terminal}})} =$$

with the following notation :

N = number of circuits for the traffic $T_{\text{terminal}} + T_{\text{transit}}$

with the loss probability p adopted.

$E_{1, N} (p)$ = loss probability for a traffic carried on N circuits
(according to the Erlang formula) *

* ($E_{1, \dots}$) = classical notation for Erlang's first formula

As in the 1st method, to facilitate agreements between Administrations, it will be convenient to use a loss probability of 5% for the traffic routed over the transit group.

ANNEX 1

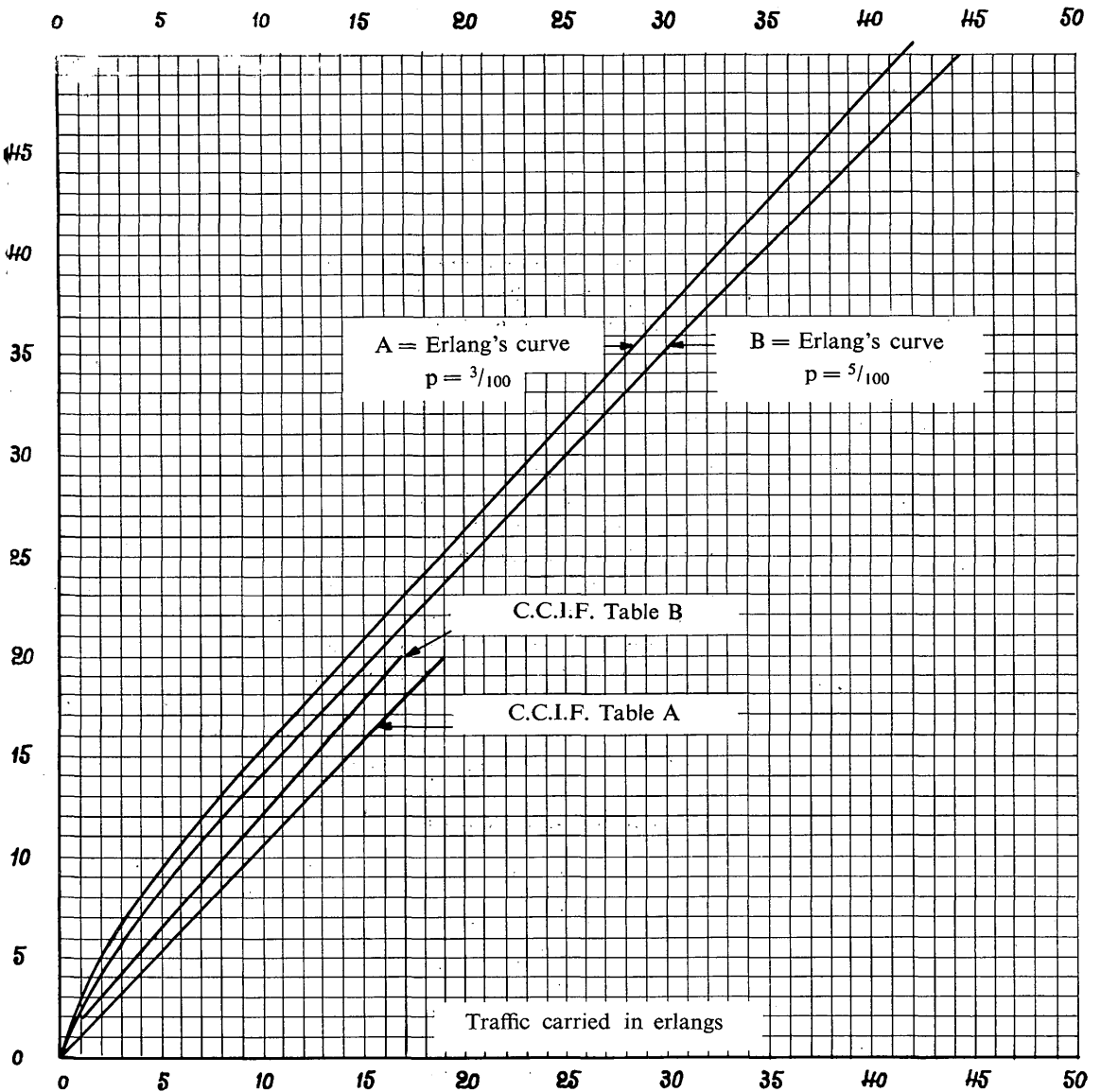
Table from the Erlang No. 1 formula for loss probabilities of 3% and 5%.

Formula: let p = the loss probability
 y = the traffic to be carried (in erlangs)
 n = the number of circuits

$$E_{1,n}(y) = p = \frac{\frac{y^n}{n!}}{1 + \frac{y}{1} + \frac{y^2}{2!} + \dots + \frac{y^n}{n!}}$$

n	$p = 3\%$	$p = 5\%$	n	$p = 3\%$	$p = 5\%$
1	0.031	0.05	26	19.392	20.94
2	0.282	0.38	27	20.305	21.90
3	0.715	0.90	28	21.221	22.87
4	1.259	1.52	29	22.140	23.83
5	1.875	2.22	30	23.062	24.80
6	2.543	2.96	31	23.99	25.77
7	3.250	3.74	32	24.91	26.75
8	3.987	4.54	33	25.84	27.72
9	4.748	5.37	34	26.78	28.70
10	5.529	6.22	35	27.71	29.68
11	6.328	7.08	36	28.65	30.66
12	7.141	7.95	37	29.59	31.64
13	7.967	8.83	38	30.53	32.63
14	8.803	9.73	39	31.47	33.61
15	9.650	10.63	40	32.41	34.60
16	10.505	11.54	41	33.36	35.59
17	11.368	12.46	42	34.30	36.58
18	12.238	13.38	43	35.25	37.57
19	13.115	14.31	44	36.20	38.56
20	13.997	15.25	45	37.15	39.55
21	14.885	16.19	46	38.11	40.54
22	15.778	17.13	47	39.06	41.54
23	16.675	18.08	48	40.02	42.54
24	17.577	19.03	49	40.97	43.54
25	18.483	19.99	50	41.93	44.53

ANNEX 2



Relation between the number of circuits and the traffic in erlangs which can be carried by these circuits, in the case :

- of the Erlang formula ($p = 3\%$ and 5%)
- the C.C.I.F. tables A and B

RECOMMENDATION No. 64

Classification of documents concerning telephony

(Yellow Book, *Volume I, XIVth P.A., Montreux 1946, p. 177*;
Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 195 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 241*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That it would be useful to standardise the classification of the documents and articles published in periodical reviews concerning telephony ;

That such a standardised classification would facilitate the task of librarians entrusted with the care of telephone archives in the different countries and, in addition, enable anyone to find the document which interests him without loss of time ;

Unanimously issues the recommendation :

That the decimal index should be used for the classification of documents and articles concerning telephony ; this index will be established within the framework of the universal decimal classification and will be published by the General Secretariat of the International Telecommunication Union ;

That it will be desirable for every author publishing an article or study relating to telephony to indicate (after the title, and if necessary after the sub-titles) the number or numbers in this index which concern the headings under which his article or the various parts of his article should be classified.

RECOMMENDATION No. 65

General Switching Plan

(Yellow Book, *Volume I bis, XVth P.A., Paris 1949, p. 195 and*
Yellow Book, *Volume I ter, XVIth P.A., Florence 1951, p. 241*)

THE INTERNATIONAL TELEPHONE CONSULTATIVE COMMITTEE,

Considering,

That the technical means (submarine cables with submerged repeaters ; radio systems) now available allow the provision of numerous telephone services across the seas to be envisaged ;

That the Administrative Telegraph and Telephone Conference of Paris, 1949, in revising the International Telephone Regulations, integrated in the " European Regime " not only the European countries but also the countries of Africa and Asia bordering the Mediterranean ;

That in 1952 the Administrative Council of the International Telecommunication Union asked the "C.C.I.F. Committee for the General Switching Plan" to study the best means to connect Europe and the Mediterranean Basin with the Middle East and Southern Asia by metallic lines or radio links,

Unanimously issues the recommendation :

That the General switching Plan concerns Europe, the Mediterranean Basin, the Middle East and Southern Asia ;

That the countries in these regions should be invited to formulate their proposals for international services at the next meeting of the "C.C.I.F. Committee for the General switching Plan",

That the working method of this Committee should conform with the decision taken by the Administrative Council in 1954 (Resolution No. 292) the text of which is associated.

RESOLUTION No. 292 OF THE ADMINISTRATIVE COUNCIL

C.C.I.F. Committee for the General Switching Programme

*(Cf. PV CA9/16, doc. 1552/CA9, May 1954
PV CA9/20, doc. 1601/CA9, May 1954)*

THE ADMINISTRATIVE COUNCIL OF THE INTERNATIONAL TELECOMMUNICATION UNION

Resolves that :

(1) The C.C.I.F. Secretariat shall remain responsible for the organisation of the work of the Committee known as the C.C.I.F. Committee for the General Switching Programme; but that close liaison shall be maintained with the Secretariats of both the C.C.I.T. and the C.C.I.R. at all stages in the organization of meetings of this Committee and its Sub-Committees ;

(2) The Secretariats of the C.C.I.F. and the C.C.I.T. shall cooperate in gathering all the data about the existing telephone and telegraph traffic and networks and also for the estimates of future needs. In this connection not only telecommunication Administrations shall be consulted, but also the other users of the main telecommunication arteries (civil aviation, meteorology, sound and visual broadcast programme transmission, etc.) ;

(3) Questions submitted to this Committee by Administrations concerning the choice of the best routes and the best type of construction (metallic or radio-relay links) of the international arteries to be constructed to carry the estimated traffic shall be studied within the C.C.I.F. Committee for the General Switching Programme, jointly by the representatives of the three C.C.I.'s ;

(4) The Plenary Assembly of each of the three C.C.I.'s shall organize its representation on the Committee.

PAGE INTENTIONALLY LEFT BLANK

PAGE LAISSEE EN BLANC INTENTIONNELLEMENT

PART TWO

MISCELLANEOUS DOCUMENTATION

**1. Arrangements (made in the internal services of each country)
to advise the caller that the telephone number of the called station has been changed,
either temporarily or permanently**

Australian Telephone Administration.

It is improbable that the arrangements made in the Australian interior service in this respect would have any influence on a recommendation on this subject. Nevertheless, the information will be furnished if it is judged to be useful.

Austrian Telephone Administration.

In the interior service of Austria information, in the cases envisaged in the question, is given for local and trunk traffic by a tape recording (talking machine with magnetic recording) or by an operator.

The information is given from a tape recording when it arises from a general change of numbers, for example on the occasion of the opening of a new local telephone exchange. The information is given in this way for about 6 to 12 weeks or until the recomposition of the series frees the numbers.

In the case of individual changes of number, the caller is connected with an information position in place of the called number. The operator at this position, after having found the required number, indicates the new number to be called. This routing to an information position is normally continued for a maximum of three months.

Note. — Further, the number changes are communicated, with no limitation of duration, to incoming circuit groups and to “information” obtained in the local service by means of a special numerical code.

Belgian Telephone Administration.

In Belgium, arrangements are made officially so that calls to telephone numbers which have been changed or ceased, terminate during a certain period at a special position responsible, for example, for informing the caller of the new telephone number allotted to his correspondent or for informing him that the telephone number he wishes to obtain has been ceased.

This routing of calls to a special position is carried out free of charge for two months. After this period, if the subscriber whose number has been changed wishes to obtain a prolongation of the facility, he must pay the charges laid down for the absent subscriber service.

Chile Telephone Company.

Described below is an arrangement which has proved satisfactory in use :

(a) *Subscriber's number changed permanently.*

In an automatic system the calling subscriber will receive an answer from an interception operator, who will advise him of the new number, for a period of about four months following the change of number. After this period, the old number is disconnected until it is required for another subscriber ; nevertheless, the directory enquiry position maintains a correct list of all changed numbers.

In manual operation, the local operator will be aware of a change of number because of the presence of a small white signal peg inserted in the multiple. In small exchanges the new number will be marked on the face of the signal peg ; in larger exchanges, the local operator, when she sees the white signal peg, will route the call to a supervisor or information operator who will have lists of the numbers being intercepted. Annexed is a proposed record form for calls to be intercepted. This form is partially filled with hypothetical information to illustrate the method of use.

The form comprises sections for each hundred subscribers on an exchange. Five sections are placed on each side of a form, so that 10 pages will accommodate an interception record for an automatic exchange of 10,000 lines. The first two digits of the subscriber's number are shown in large type in the right-hand margin of the form. Details relating to changed numbers and other information are indicated by code letters in the space above the particular numbers. The significance of the letters is indicated in the subsection below the hundred concerned. The letters would be printed at the same time as the form itself, also the headings most often used for number changes and other common information.

There follows an explanation of the more commonly used phrases :

C. Change of address : would be used to advise the caller that the called person's telephone calls are being intercepted while he moves to a new address at which he will retain the same telephone number ;

D. Subscriber temporarily disconnected : in the case of a subscriber who has asked that his telephone should be temporarily disconnected while he is absent or on holiday ;

ANNEX INTERCEPT RECORD

Exchange : MAIN

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
A Central 2801					J					R					O OFFICIAL LINE				
B Main 1099					K					W					N NO SERVICE TEMPORARILY				
F West 0161					L										P PBX				
G Central 8114					M					C CHANGE OF ADDRESS					T TAKEN OUT PHONE				
H					Q					D DISCONNECTED TEMPORARY					V VACANT NUMBER				

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
A					J					R					O OFFICIAL LINE				
B					K					W					N NO SERVICE TEMPORARILY				
F					L										P PBX				
G					M					C CHANGE OF ADDRESS					T TAKEN OUT PHONE				
H					O					D DISCONNECTED TEMPORARY					V VACANT NUMBER				

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
A					J					R					O OFFICIAL LINE				
B					K					W					N NO SERVICE TEMPORARILY				
F					L										P PBX				
G					M					C CHANGE OF ADDRESS					T TAKEN OUT PHONE				
H					O					D DISCONNECTED TEMPORARY					V VACANT NUMBER				

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
A					J					R					O OFFICIAL LINE				
B					K					W					N NO SERVICE TEMPORARILY				
F					L										P PBX				
G					M					C CHANGE OF ADDRESS					T TAKEN OUT PHONE				
H					O					D DISCONNECTED TEMPORARY					V VACANT NUMBER				

00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
A					J					R					O OFFICIAL LINE				
B					K					W					N NO SERVICE TEMPORARILY				
F					L										P PBX				
G					M					C CHANGE OF ADDRESS					T TAKEN OUT PHONE				
H					O					D DISCONNECTED TEMPORARY					V VACANT NUMBER				

Specimen for interception positions

(the explanation of the entries appearing on this form is given pages 144 and 146)

O. Service line : line used by the Administration or the Telephone Company and consequently unlikely to be called by the public ;

N. Service suspended : subscriber temporarily disconnected for non-payment of his telephone account. If the calling subscriber desires a fuller explanation, the interception operator would refer him to the Commercial Office ;

P. PBX : indicates that it is a PBX line of a subscriber's installation with extension telephones ; this information is frequently asked for by outgoing controlling operators in the long distance service (CLR operators) who have to recall the subscriber ;

T. Telephone removed : no longer a subscriber ;

V. Spare number : unallotted number.

Other items could naturally be added to meet particular conditions.

(b) *Number changed temporarily.*

The procedure would be generally as outlined in the preceding paragraphs.

Telephone Administration of Denmark.

In manual exchanges the subscriber's old telephone number is connected to a special auxiliary position where the calls are received by an operator who advises the caller of the new telephone number of the called subscriber. This measure normally finishes 6 months after a telephone number has been changed.

In automatic exchanges when the old number is called an "information" tone is heard which is an indication to the calling subscriber to call "Information" to obtain the new telephone number of the called subscriber.

National Telephone Company of Spain.

In the automatic networks, when a subscriber's number is changed, the calls terminate on an information position where the operator informs the caller of the new number. This information is maintained while the list of subscribers containing the old number remains current, except when the number has been allocated to a new subscriber.

American Telephone and Telegraph Company (United States of America)

In the United States of America, a subscriber's number which has been changed is not, as a rule, re-allotted to a new subscriber for a reasonable period. During this period, incoming calls for the number are routed to an operator, who consults a numerical record with which she is provided, and advises the calling operator or subscriber of the number change. A telephone number is only re-allotted to a new subscriber when a special record indicates few if any incoming calls to the old number.

French Telephone Administration.

In France, the telephone number of a line is never changed temporarily.

When it is changed permanently, the line corresponding to the old number is, as a general rule, connected with an information service which, after consulting the records, indicates the new number.

In certain automatic exchanges, talking machines are used to indicate a ceased number and to invite reference either to a new directory or to the Information Service.

In manual rapid operation as in semi-automatic operation, the outgoing operator obtains the information, either from the Information Service, or from the talking machine. She is thus able to inform the caller.

Italian Telephone Administration.

In the interior service in Italy, in the case of a changed number, the caller is connected with an information position in place of the called line. The operator who answers indicates the new telephone number.

The connexion to this special position is maintained for about one month after the change of number.

Telephone Administration of Luxembourg.

At present no special service of this kind is operated in the Grand Duchy of Luxembourg; a change of telephone number can be advised only if the caller inquires of the information service.

Telephone Administration of Morocco (French Protectorate)

In Morocco, changes of telephone number resulting from exchange equipment modifications, are widely publicised. In this way the changes become known by all the subscribers in the network concerned.

In addition they are notified to all telephone exchanges likely to call the subscribers concerned over lines operated semi-automatically.

Norwegian Telephone Administration.

Before the war, calls for the old number of a subscriber having a change of number were, pending a new edition of the telephone directory, referred to the absent subscribers' service which advised the caller of the new number. At present such calls are similarly referred to the absent subscribers' service, but only for a period of 1 to 3 months after the change. This is because numbers which become available because of changes must be allocated as quickly as possible to new subscribers. Care is taken to avoid giving such a number to a competitor of the old subscriber. The new subscriber is asked to refer callers for the old subscriber to his new number.

Netherlands Telephone Administration.

Generally, in the automatic networks in the Netherlands, an "information" signal (buzzing, alternately high and low) is temporarily sent from numbers given

up by their users, either because they have ceased to be subscribers, or they have been given another number, or because their telephone connexion has been transferred to another network. In certain circumstances, this information signal is replaced by a talking machine giving information (information given, naturally, in the dutch language). The Netherlands users of the telephone who, after having established communication automatically with a certain telephone number, hear the information signal, must call the telephone information service of their appropriate district. This service will give them the necessary information, either from the records held, or after having sought information from the district in which the called number is located.

When, in the international service, an operator hears the information signal on a number called in the Netherlands, she must ask for information from the Dutch assistance operator.

For completeness, it is pointed out that in certain Dutch networks the information service is also the absent subscribers' service. In these networks, the information signal is also sent in certain conditions for the numbers of subscribers temporarily absent who have had recourse to the help of this service.

At Amsterdam, and in that town only, the absent subscribers' service replies directly to calls destined for subscribers temporarily absent who have had recourse to use of this service.

Telephone Administration of the Federal German Republic.

In Germany when a subscriber's number becomes vacant for one reason or another, this number ought not to be given to a new subscriber before the next directory is published. This intention cannot at present be observed in Germany because the requests to become new subscribers are very numerous. This results in subscribers' numbers which have become vacant, often being given to other subscribers before the said directory issue. For this reason, in the reply to the question posed, it is necessary to distinguish between two cases :

(a) Because of a change, the old subscriber receives a new telephone number and, after a short time, his old number is given to another subscriber ;

(b) The subscriber receives a new telephone number and, provisionally, his old number is not given to another subscriber.

Under supposition (a) : if the calling subscriber is put into communication with a telephone number, the renter of which has changed between times and if, as soon as he has verified it, he consults his trunk exchange (on the public station he is using), a call in replacement is allowed on condition that he maintains his booking for a call to the subscriber in question, when his trunk exchange (on the public station he is using) advises him of the change of number of the called subscriber. No charge is made for the first call if its duration has not exceeded 1 minute. If the duration of the first call has exceeded 1 minute, the call will be fully charged for at the usual rates.

Generally, when he draws the attention of the trunk exchange (or of the public station he is using), the caller is able to quote the new telephone number with which

he desires to be connected, because the subscriber who was given the telephone number which, a short time before, belonged to someone else, was told he must expect false calls and was asked to advise callers of the new number of the old renter.

Under supposition (*b*) : there are two distinct cases also :

(1) The subscriber's telephone number is changed for service reasons. The telephone number becoming vacant is transferred to an information position from which the new number is quoted to each caller. In the trunk service, this information is given from the information position to the controlling operator handling the required call ; and the calling telephone is not connected with the information position. In consequence, no charge is made in such a case. The controlling operator asks the caller whether he wishes to be connected with the new number. In the affirmative, she establishes the call. In the negative, she cancels the booking without charge.

(2) The telephone number is changed at the request of the renter. In this case the renter *must* ask for his old number to be connected with the " Absent Subscriber Service ". When the number is called, the Absent Subscriber Service answers in lieu of the called subscriber. The controlling operator then informs the caller that the called number is connected with the Absent Subscriber Service and asks whether he will speak with that service. In the affirmative, connection with that service is established and charged normally. The controlling operator does not quote the new telephone number to the calling subscriber.

Telephone Administration of the United Kingdom of Great Britain and Northern Ireland.

Calls to the former telephone number of a subscriber whose telephone number has been changed are intercepted at the local exchange concerned and routed to an operator who advises the caller of the new number. No charge is made for a call intercepted in this manner.

After a suitable interval, the old number is removed from interception and either allotted to a new subscriber or connected with " number unobtainable " tone to indicate that it is a spare number.

Swedish Telephone Administration.

In the case of a call for a spare number—which can be either a number not yet in use, or a number made free by the cessation of an agreement or by a change of number (because of a fault etc.)—the caller is informed of the reason for which the called number cannot be obtained. In the same way, the necessary information is also given to a subscriber calling a number suspended from service or a number the renter of which has asked for calls to be referred temporarily to another number.

In manual exchanges, the information is furnished in accordance with the multiple jack markings. In automatic exchanges, the caller receives either a direct

reply from the operator, who then gives the necessary information, or a transfer signal which indicates that in order to obtain the latest information the caller must call a certain number at the main exchange.

Swiss Telephone Administration.

According to the facilities available, when the called number has been changed, the following arrangements are made in Switzerland :

(a) The call is automatically switched to an operating position in the information service.

(b) The call is answered by a talking machine indicating that the number has been changed and requesting the caller to consult the latest edition of the directory.

(c) A tone is connected to the changed number. This audible signal has a frequency of 450 cycles per second, rhythmically interrupted as follows : — . . . — . . . , signifying that there are special circumstances attaching to the number about which the information service No. 11 can give information.

Turkish Telephone Administration.

At present no special service of this sort yet functions in Turkey. A change of telephone number can be advised only if the caller inquires of the information service.

* * *

2. Telephone Information Service

No telephone information service exists in the following countries : Australia, Belgium, Chile (Chile Telephone Company), Denmark, Spain (Compañía Telefónica Nacional de España), United States of America (American Telephone and Telegraph Company), Luxembourg, Morocco (French Protectorate), Norway, Netherlands, Federal German Republic, United Kingdom of Great Britain and Northern Ireland, Sweden, Turkey.

The Administrations of Austria, France, Italy and Switzerland have given the information contained in annexes 1 to 4 which follow.

ANNEX 1

Information relating to the existing information service in France

An oral telephone information service operates in Paris each day from 7 hours to 0 hours 30. It allows a subscriber in the Paris automatic area (Paris, suburban and associated regional zones), for the price of a local call (Paris and its suburban zone) or of a call to Paris (associated regional zone), to obtain a summary of general information, the principal sporting events and weather forecasts. Each bulletin is renewed a minimum of 6 times a day and a maximum of 12 times ; and in the afternoon bulletins there figure the latest racing results. It lasts for 3 minutes 30 seconds of which 24 seconds as a maximum are reserved for publicity announcements. The call is automatically severed after the regulation period of 3 minutes and a half.

Three Organisations cooperate in running the service :

(1) The French Broadcasting Authority (*La Radiodiffusion française*) which draws up and records the news bulletins.

(2) The P.T.T. Service which handles the retransmission to the different Paris telephone exchanges and the four transit centres of Paris serving the exchanges in the suburban and associated regional zone.

(3) The Advertising Agency which collects the advertisements.

The income is divided as follows :

— The whole of the call charges go to the P.T.T. Administration ;

— The income collected for the advertising is divided between the Advertising Agency, the Broadcasting Authority and the P.T.T. Administration.

Extension of the service beyond the limits of the Paris automatic network and the associated zone is possible but not at present envisaged.

ANNEX 2

Information about the telephone information services in Italy

An " information service " exists in Rome, Turin and Milan and will soon be provided also in other areas.

A subscriber who dials the service receives a bulletin of the most important latest news, either of a general character or of sports matters.

The bulletin is changed six times during the 24 hours and is heard for 3 minutes.

Each network has a talking machine of the magnetic recorder type.

The statistics taken during the first months of operation show that the information service has been favourably received by the telephone users.

ANNEX 3

Description of the Austrian Telephone Administrations service for absent subscribers, information and enquiry

Wishing the telephone to serve the subscriber not only as a means of transmission but also to enable him readily to obtain information on any subject, the Austrian Administration has organised, for several years, oral absent subscriber's, information and enquiry services.

On 15th April 1948, the Austrian P.T.T. Administration introduced, for the urban network of Vienna, the " service for absent subscribers, information and enquiry ", responsible for replying to calls to absent subscribers or barring the receipt of the latter. At the request of the subscriber, this service transmits by telephone concise messages to subscribers in his own or another urban network ; arranges alarm calls and gives, within wide limits, all sorts of information, for example on the subject of theatre and cinema programmes, sporting meetings and their results, pharmacies open at night, etc. In other important Austrian urban networks the P.T.T. services for absent subscribers, information and enquiries are also installed.

Operation of the service.

There are various kinds of requests :

(1) Request for the operator to take note of the calls incoming during the absence of the called subscriber (*request A*) ; the operator replies to the caller in conformity with the called subscriber's instructions, or takes note of short messages to pass on to the called subscriber.

(2) Transmission of a message of up to a maximum of 30 words to subscribers nominated by the person requiring the transmission (*request B*).

(3) Alarm call service operated by the P.T.T. service for absent subscribers, information and enquiry, which consists of giving at a convenient hour a ring on the subscriber's telephone (*alarm call*). The request is considered as executed even if the subscriber does not answer the call, if his line is verified as working normally and if the ring is repeated several times.

(4) Information on various subjects given once only (*request for information*).

A subscriber, wishing to make a request of the "P.T.T. service for absent subscribers, information and enquiry", dials the telephone number A-0-7 in the Vienna network, tells the operator his telephone number, and explains what he wants done by the service for absent subscribers, information and enquiry. In order to verify the telephone number quoted by the subscriber, his demand is not accepted immediately, but only after he has been recalled by the operator. The subscriber then formulates his request specifying the object, the time of execution, the contents of the message and the period which his request covers. The charges vary according to the nature of the request and the services rendered. These charges are carried in to the same monthly account which covers the telephone charges. In order to avoid all abuse and to afford the possibility of making requests away from the subscriber's telephone, a *code word* can be arranged. Certain information, for example about pharmacies open at night, is given free of charge. The operators in the information service have very comprehensive records, such as to enable them to reply very quickly to all questions posed. If necessary, the operators contact the competent authorities with a view to obtaining a reply to a question which they cannot immediately answer, and then communicate the result to the caller.

In the case of requests "A", the subscriber's telephone is connected, for the period covered by his request, to a talking machine announcing: "Please call A-0-7, P.T.T. service for absent subscribers, information and enquiries". If during this time, the subscriber is present he can, nevertheless, use his telephone for calls. On the arrival of a trunk call the trunk exchange signals to the caller the fact that the called subscriber is replaced by the P.T.T. service for absent subscribers, information and enquiry; and he has the choice of talking to the latter or refusing the conversation. In the first case he pays a charge appropriate for 3 minutes of conversation; in the second case he must pay only the charge for booking a call.

First installations completed.

Requests "A" have been met since the summer of 1948, when a talking machine was installed. The distribution lines permit of the transmission of the announcements given by this machine to all the automatic exchanges in the urban network of Vienna. The phrase "Please call A-0-7, P.T.T. service for absent subscribers, information and enquiry" was initially recorded on a normal sound film (reproduction of sound with the aid of light), rolled on a reel of a diameter of 60 cm, turning very slowly on its axis. One turn would correspond to the recorded phrase and is completed in 5 seconds. The installation described was very sensitive. A slight displacement of the film caused an interruption of the transmission or unacceptable variations of level, and rendered the reproduction incomprehensible. This equipment required careful maintenance at all times; the necessity often to change the lamps for the light source and the photo-electric cells made operation of the equipment onerous. However, its use was justified if one considers that the information given by the talking machine could be simultaneously distributed to 1000 subscriber's lines (maximum number).

Immediately after the adoption by Austria of the football betting service, it was found that at the end of the matches, the P.T.T. service for absent subscribers, information and enquiry as well as the telephones at football grounds received thousands of calls, each participant in the betting wishing to know the result at the end of the match.

The available equipment could not meet such heavy demands; there was extreme congestion in the automatic exchanges concerned. Quite naturally the idea then occurred to

record by a magnetophone, information of general interest—the results of sports meetings, for example—to facilitate their simultaneous diffusion to subscribers and also to avoid the tiring repetition of such information and the employment of auxiliary staff at such times.

Meanwhile, the Austrian Administration could not have recourse to magnetophones manufactured by industry, as these did not provide for continuous uninterrupted reproduction. For the continuous diffusion of announcements, an endless tape with a suitable device for rotation is necessary. After many tests such an equipment was completed by the Austrian Administration and used for the first time in mid-December 1949.

With very modest means, a magnetophone using continuous current magnetic recording was constructed. The use of a rewinding arrangement was discarded from the outset because the extra items required were not available. For a tape speed of about 20 cm/sec, a paper tape was formed into an endless loop which rotated on several small rollers fixed to a plate. It was arranged that the tension of the tape could be adjusted by moving a part of the plate carrying the rollers.

The first automatic installation, employing sound tape recording for the P.T.T. service for absent subscribers information and enquiry, was put into service on 15th December 1949. Since then information from the Austrian football betting service has been recorded each week, on two separate installations and distributed in the urban network of Vienna to interested subscribers when they call two numbers (subscriber's groups of 10 lines each). According to the number of announcements received, 25 to 30 recordings per week were necessary.

In this way, there was success from two points of view :

(1) After the adoption of the first service with sound type recorders for the P.T.T. service for absent subscribers, information and enquiry, false calls to this service and for the football betting service no longer occurred.

(2) At first 20, then 120 subscribers were able to hear the announcements simultaneously, the number of ineffective calls thereby being sensibly reduced.

The endless tape system was lengthened in such a way as to obtain a loop enabling a text of 90 seconds duration to be recorded. The installation was meanwhile rather difficult to control ; nor was the quality of reproduction, because of the use of continuous current, very good in comparison with that now obtained. The recording studio was formed by simple partitioning, camouflaged by wool coverings. The procedure for receiving notices, and recording them, was quite rudimentary. At this time, all was done in an intentionally provisional way in avoidance of a final and durable scheme on account of the rapid development of the technique.

A new application for the sound tape recording installation was presented by the bringing into service of new automatic exchanges which involved changes of subscribers' numbers. Subscribers calling the cancelled numbers are given the advice " Changed number, please call A-0-5 (information on subscriber's numbers) ". As two installations were used for the purpose, the number of sets of sound tapes was increased to four.

As already mentioned, the use of a sound film had given little satisfaction from the point of view of the security of the service and economy, and it was replaced by magnetic tape (sound tape).

At first, information on the subject of the betting on football was obtained on two normal subscriber's numbers (groups of 10 lines each). This number of lines, however, was insufficient. Transmission equipment for 120 lines, allowing a constant transmission level to be maintained, whatever the number of callers, and reached by a short dialling code (A-0-65) was built and put into service on 29th March, 1950.

In the course of later development, mechanical improvements were introduced permitting the realisation of a holder accommodating 8 sets of sound tape. At the same time,

the arrangement for continuous current magnetic recording was replaced by a high-frequency recording system with a sufficiently low noise level. The new sound tape holder already permitted a length of tape corresponding to a maximum length of texts of 180 seconds with a tape-speed of 13 cm/sec. On a relatively tall holder (frame), the sound tapes were guided by the rollers so as to rise and fall in moving, these rollers were operated by an arbor (shaft) continuously turning by means of a friction clutch. For plastic tapes presenting variations of elasticity and static charges, paper bands were substituted which were suitable despite hard mechanical stress.

Until this phase of development, two sets of sound tape had been used each with apparatus for erasing, recording and reproduction. Because of the operating reliability obtained only one band was used thereafter for the records (for example "Please call the absent subscriber's service A-0-7" etc.).

After these mechanical improvements, electrical progress was made. Special recording and reproducing amplifiers were made, separate from the apparatus for moving the tape, with a consequent reduction to a minimum of the dimensions of the equipment. Faults are signalled automatically, for example in case of tape stoppage, broken tape, maladjustment of tension and circuit faults.

Current services

The latest installations have rendered possible the introduction, one after another, of a large number of new services, namely :

(1) *Weather forecasts* on the number A-0-66 with 60 outlets. The information is changed three times a day ; at 6 h., 11.30 h. and 17 h. To the weather forecasts there was added later the bulletin on the state of the roads furnished by the Provincial Government of Lower Austria and the bulletin on the level of the waters from the hydrographical service.

(2) On the number A-0-67 (40 outlets) *snow bulletins* are transmitted, during the six months of the winter season, from 40 Austrian sport stations. In summer, information on the subject of mountain and other excursions is transmitted on the same number.

(3) The times of departure of the Tourist Office cars from the Vienna Post Office are publicised continually on the number A-0-61 (21 outlets).

(4) On the number A-0-62 (12 outlets) details of the movement of share values are published each working day several minutes after the closure of the Bourse.

(5) *Cookery recipes* :

Cookery recipes, furnished by the State or Municipal housekeeping schools, taking account of market conditions, are published on the number A-0-64 (45 outlets). This service is much appreciated by housewives. The duration of 5 to 6 minutes of the items, allows a note to be made of the text.

Apart from the services mentioned above, a large number of special services are provided by means of tape recorders ; to ascertain the extension numbers at the Vienna Fair, change of number for the new West Station, etc. Trains of sound tape are also used for the internal services of the Administration. On the occasion of preparations for important broadcast transmissions, recorded announcements in the languages of the transit countries are employed (for example, "Vienna here, circuit test for a transmission to London"), thus assisting the work of the operator.

Technical improvements.

The multiplicity of the services required improvements in the domain of recording technique. With this intention a small sound-proofed studio was studied. The mechanical part was improved by arranging an endless tape in a holder of minimum dimensions.

A metal box contained, coiled and carried on 8 rollers moveable about their axes, the magnetic tape containing the text for emission. To load the box with tape a separate device is used. With a speed of 13 cm per second, it was necessary to load the box with 23.4 metres of sound tape in order to enable texts reaching a total duration of 180 seconds to be recorded. In the case of very short texts (advice tapes), the same text is recorded several times on the one ribbon. After filling the box the two extremities of the tape are suitably stuck together. Care is necessary to determine the exact tension to give the tape to ensure that there is no excessive friction inside the box. The different diameters of the wrappings of tape have in consequence a sliding movement in the roll. The tape leaves the box by the interior circumference of the roll and rejoins it by its exterior circumference (figure 1). Movement is possible only in this direction ; the tape is prevented from moving in the opposite direction to obviate the tape dropping back. With a well adjusted " critical length " a tape inserted in the box moves with perfect stability, without any fault, for several months. Two boxes are prepared containing the same length of tape, the length of tape being proportional to the length of text experience shows most likely to be required. In the archives are other boxes filled with tapes of different lengths. The operators reading the text have become used to regulating the rate of speaking in conformity with a marked chronometer and (within certain limits) according to the length of tape. Experience has shown that re-recording because of different speeds of speaking the text is rarely necessary.

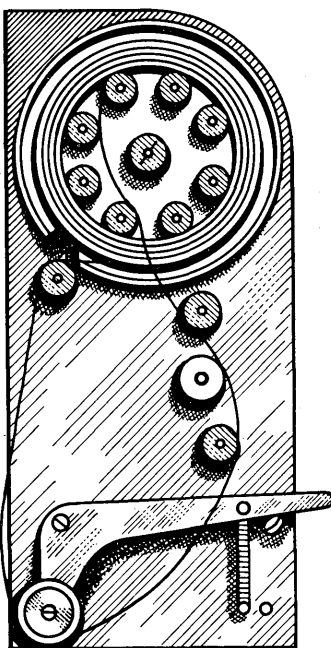
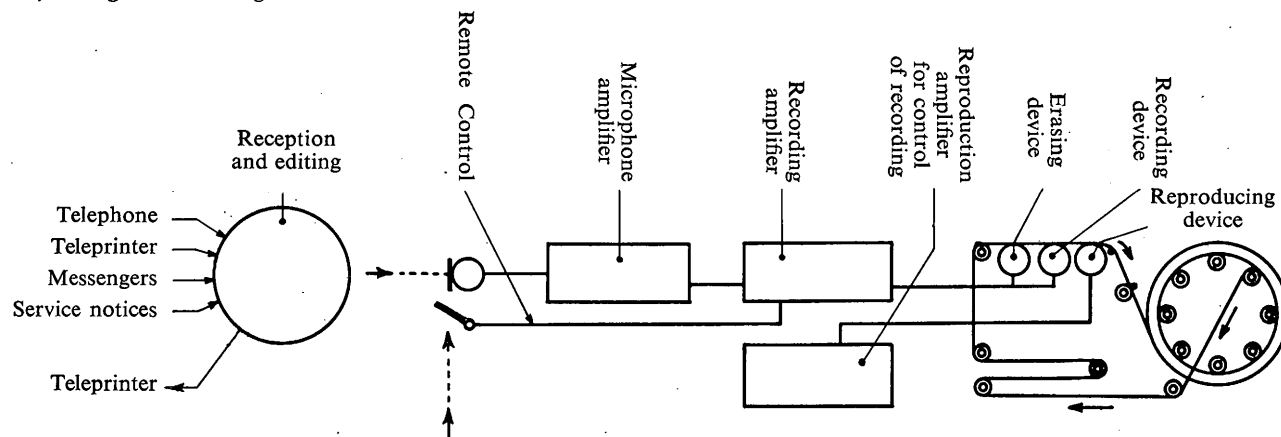


FIGURE 1

The detailed description of the magnetic tape equipment is justified by the fact that the Austrian Administration did not wish simply to resort to the ready-made product of the industry and made its own attempt to find a solution different from those so far obtained.

I. — Reception, editing and recording



II. — Reproduction

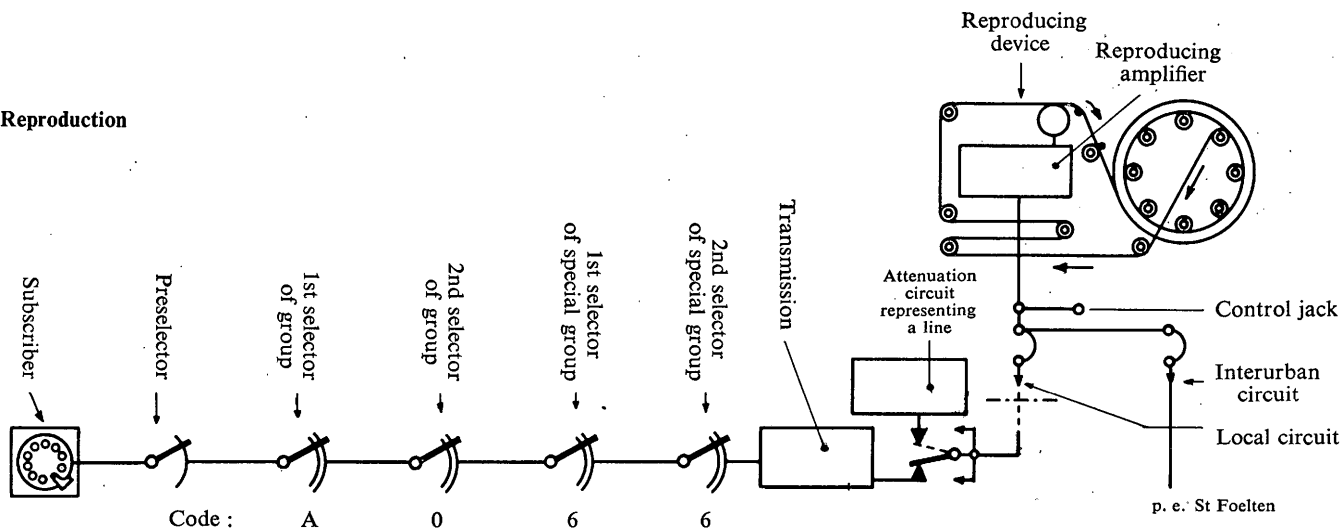


FIGURE 2. — Diagram of the service for absent subscribers, information and inquiry, for recording on steel-tape

The use of boxes for looped tapes entailed a modification of the method of use. In place of universal "sets" suitable for recording as well as reproduction and providing all the three facilities of recording, reproduction and erasure, there was planned a central recording set handling all recordings and several sets for reproduction fed by the boxes of magnetic tape. Introduction of these boxes also enabled texts to be prepared for reproduction only at fixed times (For example cookery recipes). This method of working corresponds exactly with that for discs, but with the advantage of greater quality and economy.

Recordings of legends and short stories.

For this reason, the Administration was able to realise an idea long envisaged and which appeared at first somewhat risky. The adoption of "short story tapes" presented an unexpected change from the diffusion of concrete information to one of artistic recital. On the code A-0-60 (60 outlets) was introduced a service of recorded "legends and short stories". The reading for the tape recording is done by an operator, belonging to an artistic group responsible for the service, in addition to her normal work.

Naturally one could not connect a subscriber to the transmitting apparatus during the course of a story and it was necessary to await the moment of commencement. The most obvious idea, to cause the tape to be started by an incoming call, could not be used because of the facility for simultaneous calls. It only remained to connect incoming calls to a "waiting tape", so as to cause calling subscribers to wait as do visitors to a cinema.

The calling subscriber who dials the code A-0-60 first hears children's songs, alternating with expressions such as the following: "My dear children, a little more patience, the story will soon commence". At this time it was ascertained that the normal telephone exchange equipment, as well as the subscriber's lines, would permit of the transmission of music with a frequency band adequate for the purpose.

The apparatus recently completed offered all facilities for effects in the domain of broadcasting (noises and special effects). In practice the record of stories is changed once a week and this branch of the sound tape service is a great success.

The "waiting" tape is always well received; because of the pieces of music, certain subscribers like it as much as the story record.

In practice, switching from the "waiting" tape to the "story" tape is effected by means of a relay, operated by an impulse given with the aid of a small silver conducting point, applied to the "story" tape at the end of the text.

In future, to shorten the waiting period, a tape with a double track of the text of the story, out of phase by half its duration, will be recorded twice. The subscriber listening to the "waiting" transmission will be switched at the nearest story commencing time (maximum waiting time about 1.5 minutes).

Other services.

Beyond the services mentioned above the Austrian Administration has installed special tape recorded services, for example on the occasion of the election of the President of the Federal Republic of Austria, permitting a simultaneous reply to 400 calls.

Because of the present situation in Austria, it was necessary to renounce for the moment the possibility of offering a service of current news. It should be noted that the whole service of information by sound tape does not possess qualified technical or editorial staff, since employees of the broadcasting transmission service also undertake the technical work of the information service; and that the operators who undertake the reading of the information are chosen in each individual case from the appropriate personnel. Operators outside special groups very quickly take to the new occupation and change their style in a short time.

In size the whole installation including the studio is very modest and amounts to less than 15 square metres.

The consumption of material is small, the paper tapes show no appreciable wear of their electrical or mechanical qualities after several months.

Figure 2 shows a diagram of the whole of the services with sound tapes for absent subscribers, information and enquiry, from the arrival of the subject matter to the distribution over the telephone lines.

The texts arrive by telephone, teleprinter or are brought by messenger. They must be adapted to the technical requirements (length of tape). With the aid of the microphone amplifier and of the recording amplifier, the text is recorded on the sound tape by the magnetic recording device. In lieu of the microphone, an outside circuit can be connected to the recording amplifier. A reproducing device permits control of recording, while an erasing device ensures preparation of the tape.

The magnetic tape, in its box, goes from the recording set to the reproducing set and emits its text through the reproducing apparatus. The spoken text arrives at the local or trunk network through a reproducing amplifier. A control device allows the quality of transmission to be regulated continually. The amplified modulation is conducted by a local circuit to the telephone exchange, where it is distributed to the desired number of outgoing lines. While an outgoing line is not occupied by a subscriber, it is connected to an attenuation circuit of equivalent electrical characteristics to those of a subscriber's line. At the subscriber's telephone a constant transmission level is obtained irrespective of the number of lines used. The subscriber dials the number (4 stages of selection), seizes a line and disconnects the corresponding attenuation circuit.

Unfortunately, owing to a shortage of circuits, it is at present impossible to create, for the whole of Austria, a central and economic tape recording service, so as to cease the transmission of news by teleprinter and save the investment represented by studios, recording apparatus and supplementary staff in other regions of Austria. For this reason such a central organisation has been provided only for the service giving the time. Similar installations to those in the capital of Vienna, but of less importance, exist at Graz, Klagenfurt, Linz and Innsbruck. In these latter installations the fault signal has been suppressed, experience having proven the reliability of the tape recording equipment.

In order to render the sound tape transmissions accessible to subscribers in local networks other than those mentioned, it would be necessary to have special connecting lines which are not at present available, neither as voice frequency channels or as carrier frequency ones ; a sufficient number of lines is in course of being provided by the progressive construction of coaxial systems and trunk automatic exchanges.

Lastly, there should be mentioned the services belonging to the group of the " service for absent subscribers, information and enquiry " but which do not lend themselves, because of the character of their function, to the use of tape recordings. These are :

the fault service of each local network,

the enquiry service,

the exchange which receives interurban call bookings,

a service in Vienna which prepares conference calls,

the central fire, police and ambulance services which are obtained by means of a short characteristic code.

The Austrian Telephone Administration has succeeded in interesting the public in the service for absent subscribers, information and enquiry, in trying to meet their various interests. The expressions of appreciation in the press and on the radio shows that it has found a good way.

ANNEX 4

Description of the existing telephone information service in Switzerland

The concession accorded by the Swiss Telephone Administration to the Swiss Telegraph Agency envisaged that the Agency would undertake only the collection of the news to be diffused. To this end it drafts bulletins, the material of which must contain the most important latest news. The length of each bulletin must be such that reading it (and, in consequence, the "listening time") does not take more than 3 minutes at the speed of normal diction.

Six bulletins are emitted each day in each of the three Swiss national languages (German, French and Italian) according to the following programme :

- 1st bulletin : from 6 h. to 9 h.
- 2nd bulletin : from 9 h. to 11.30 h.
- 3rd bulletin : from 11.30 h. to 14.30 h.
- 4th bulletin : from 14.30 h. to 17.30 h.
- 5th bulletin : from 17.30 h. to 21.30 h.
- 6th bulletin : from 21.30 t. to 6 h. next day.

For important events, special bulletins are prepared and diffused at any hour of the day or night.

The instrument of concession mentions also that each bulletin must contain most recent news material, event that which has been received during the period in which the previous bulletin has been diffused. Moreover, it specifies that the telephone information service can neither give information of a commercial character, bourse share values etc., nor regularly transmit sports results. Direct or indirect advertising is prohibited. Its announcements must be politically and religiously impartial.

The provision of the necessary apparatus and its operation, including recording and reproduction by means of talking machines, are the exclusive affair of the Telephone Administration ; rental of the equipment, lines and other telephone plant as well as regulation of the technical operating costs, are the subject of a special agreement.

It had been decided that all telephone subscribers should be able to reach the telephone information service in an identical manner. This was tantamount to planning to have the same numbers everywhere for this service. Held in reserve for this were the numbers 167, 168 and 169 which before long could be selected in all groups in the network. It was convenient to allocate the number 167 to the information service in German, number 168 to the service in French and 169 to the service in Italian.

In its major aspects the Telephone Information Service functions in the following way :

As soon as the editorial service of the Telegraph Agency has prepared the German and French bulletins for the telephone news service, they are transmitted by two teleprinter circuits (point-to-point) to the Telephone Administration's recording studio at the Berne Post Office. One of these circuits serves for the transmission of the German language bulletin and the other for the French language one. A third circuit will be necessary when the Italian language news service is introduced, as envisaged, in 1951. These two or three circuits are indispensable for the security of the service because they ensure continuity in the event of a fault in one or other set of apparatus.

Recording is carried out in a studio comprising three separate sound-proof booths.

For news recording, as at present practised, steel tape talking machines are provisionally used on a magnetic recording basis. The voice current transmitted by the microphone amplifier operates a recording electro-magnet forming part of the machine. A steel tape passing at a constant speed between the poles of this magnet is submitted to an exciting flux varying in sympathy with the microphone current. If the tape is then passed at the same speed and in the same direction between the poles of a reproducing electro-magnet, an extremely weak alternating current is generated in its windings, corresponding to the

variations in the magnetic state along the steel tape. The almost imperceptible current is magnified by an output amplifier, sufficiently for the reproduced speech to be suitable for a telephone receiver.

The machine is equipped with two pairs of bobbins fixed on an axis. Driven by a motor, these bobbins turn for three minutes in the direction set for presentation, stop, then turn again for three minutes in the opposite direction. Between the two pairs of bobbins are fixed two steel tapes so that the rotation of the bobbins causes them to wind or unwind in one direction or the other. These two tapes are guided so that they always pass very exactly between the poles of the recording, reproducing and effacing electro-magnets. For each tape there is a complete system comprising a cancelling magnet, a recording magnet and a reproducing magnet. In the course of a new recording, the old is cancelled automatically.

The machine is made in such a way that the duration of unwinding of the tape is a maximum of three minutes, or six minutes for the two tapes. An item of 3 minutes duration can be recorded on the first tape and simply be repeated on the second, or one of six minutes using the two tapes successively. In addition, the machine is provided with a manual switch which enables the recording time to be shortened at will. The machine with its accessory equipment as well as the output amplifier is mounted on one and the same frame.

Thanks to constant technical progress, the Swiss industry has succeeded in developing a new and improved method of recording and reproduction which employs high frequency modulation. Apparatus working on this principle is already on the way and one of the prototypes forms part of the equipment of the telephone information service. This test apparatus also functions with two recording tapes mounted on two independent sets of bobbins placed side by side. The two tapes unwind successively in the same direction. At rest, each is wound on its left hand bobbin. When the machine is operated, tape No. 1 unwinds at a constant speed from left to right. After unwinding for 3 minutes, it stops and it is the turn of tape No. 2 to unwind in the same direction. As soon as the second movement is started, tape No. 1 goes into reverse, from right to left, at five times the speed in order to wind itself afresh on the left hand bobbin. When tape No. 2 has run its course, it is tape No. 1 which moves again while tape No. 2 rewinds at high speed, and so on. Here, contrary to the action with the machine with the steel tape already described, recording is done simultaneously on the two tapes. This arrangement offers great advantages. It permits first of all the complete avoidance of silences between two repetitions of the text, the "blanks", which the listener considers to be wrong, because of the loss of listening time, and which give him a feeling of frustration. In fact, with the recording repeated, the announcer speaks a little more quickly the second time and as the two tapes are of the same length, the second will have too short a recording; during the reproduction, the second text will be followed by a silence lasting until this tape arrives at the end of its course. With a single recording, there is a certainty that the voice will be reproduced with the same intonation by each of the two tapes. These advantages are important for a telephone information service where, to meet a requirement of newspaper editors the listening time (per call) ought to be limited to three minutes and where listening does not necessarily commence at the moment one of the recording tapes starts to move, but at any time during their passage.

It sometimes happens that the recording tapes of special steel break and cannot be resoldered. These stoppages of the emission are very disagreeable in automatic telephone operation, since it is necessary to avoid the abortive calls made during the stoppage being charged. To prevent this automatic charging, it would be necessary for stoppage of the talking machine to provoke the sending of a disconnection signal to the charging apparatus in the network transmitting the modulation; a signal which would be received by a special receiver in each linked automatic exchange.

Another method consists in recording each bulletin simultaneously on two machines, one for the normal service and the other as a reserve. In case of failure, the stoppage of the first machine automatically causes operation of the second. Continuity of the service is thus ensured. In order to increase security the recording could be repeated on a third machine which will undertake the role of the reserve machine. The chances of an interruption of the emission will thus be greatly minimised. Such an organisation will naturally require

a large number of talking machines ; counting three machines for service in each language, there must be nine machines plus two in reserve, or eleven machines in all to ensure an uninterrupted day and night service. The Swiss Telephone Administration has chosen the second arrangement.

Each talking machine with its output amplifier, its usual equipment and accessories, is fitted in a frame which can be placed vertically in whatever space is available at the telephone exchange. It is connected to the distribution network through a special control desk. The connection between the microphone and the talking machine is also made through this desk.

The amplified modulation is led by collecting bars to the translators placed at the local automatic exchange (figure 1).

At the time of a call, the second special services selector seizes a free connecting translator. On the number 16 for the service in German and 10 for the service in French, are the connecting relays, the relays for automatic charging (metering), the statistical meter as well as a small time relay which measures the listening time and interrupts at the end of 3 minutes (figure 2).

Recent experience with the " Telephone weather forecasting service " has demonstrated that a decentralised organisation with several distinct recording centres would not suit the telephone information service, because it would occasion more inconvenience than advantages. In fact the centralised organisation with a single studio permits the reduction to a minimum of the effective recording equipments and employs a minimum of talking machines ; affording a material reduction in the cost of the service and facilitating the recruitment of personnel and their organisation ; in addition, there is no retransmission of the bulletins by teleprinter or by telephone to other centres, which is costly, complicated and causes delay to occur in the regular execution of the programme of emissions. Off-setting this, is the disadvantage of having to have one or several interurban transmission networks, covering the whole of the country, having, in short only relative importance and that solely financial ; it suffices to take account of this in the charges to be covered, because the necessary lines are easy to obtain now that there is in Switzerland a network of carrier current telephone cables of large capacity, which completes the old network of interurban cables over all the principal arteries.

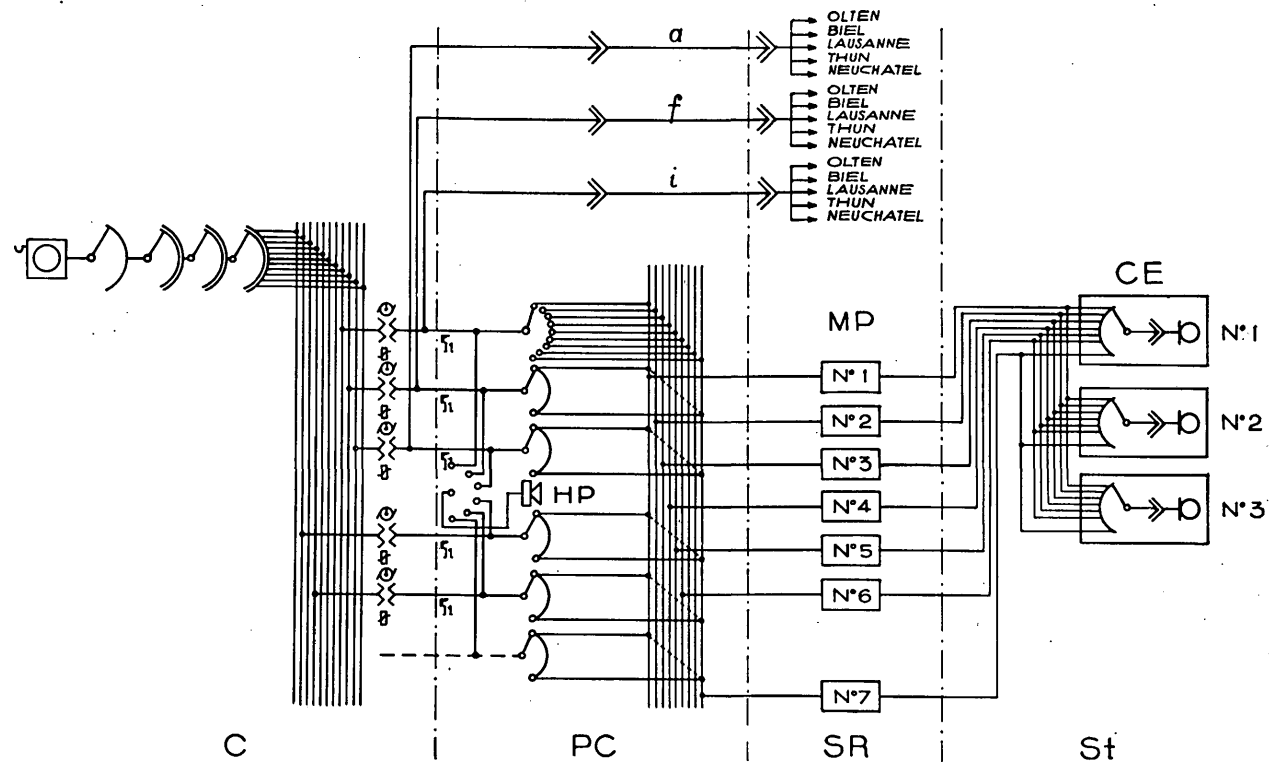
Thus, with the organisation adopted, a subscriber at Basel who dials the number 167, for example, is connected by the automatic equipment at the local exchange to a local power amplifier, fed by a trunk circuit carrying the modulation from Bern. This circuit is in a trunk telephone cable between Bern and Basel, passing via Olten. At Olten, an intermediate amplifier (or line amplifier) amplifies the modulation, which is weakened over the section of cable Bern-Olten, and permits simultaneously the leading of a junction circuit via the local power amplifier to the principal exchange at Olten, and other trunk lines transmitting the modulation to Zürich and Luzern.

To the line amplifier at Bern (also connected to the collecting bars) are also connected the trunk circuits used for sending the modulation to the diffusion centres of Lausanne, Bienne, Neuchâtel, Thun, etc. There are also 3 transmission networks which cover the whole of Switzerland and which retransmit the modulation of the services, in the three national languages, to each trunk nodal exchange or each trunk terminal exchange (see figure 3).

Statistics for the first months of operation show that the Telephone Information Service has been favourably received by telephone users. Introduced first of all at Basel, Bern, La Chaux-de-Fonds, Lausanne and Zürich, it will be extended before 1953 to all the other groups of the network in Switzerland.




The tariff for the Telephone Information Service, fixed at 20 Swiss centimes per call, can appear high compared with the price of a daily newspaper, which gives the most varied and complete press information—comprehensive articles, reports, commentaries, reviews, commercial and sporting information etc. By its very nature it should not be considered as a competitor of the newspaper ; sooner or later, the press will recognise its merits and regard it as an ally to which, in its own interest, the press will accord full support.

It is considered that the results of operating this new service will improve when it becomes better known and implanted in the habits of the public.



Comments of figures 1 and 2

C = Automatic telephone exchange
 PC = Central desk
 SR = Repeater station
 St = Studio
 HP = Control loudspeaker
 MP = Talking machines
 CE = Recording booths
 M = Microphone

 Rotary manual switch
 Amplifier
 Translator




 Relay
 Timing relay
 Disconnecting key

FIGURE 1. — *Diagram of principles of the telephone information service*

ATS = Swiss Telegraph Agency
 Bern ab = Subscriber at Bern
 a = German
 f = French
 i = Italian
 Ia = Announcements in German
 If = Announcements in French

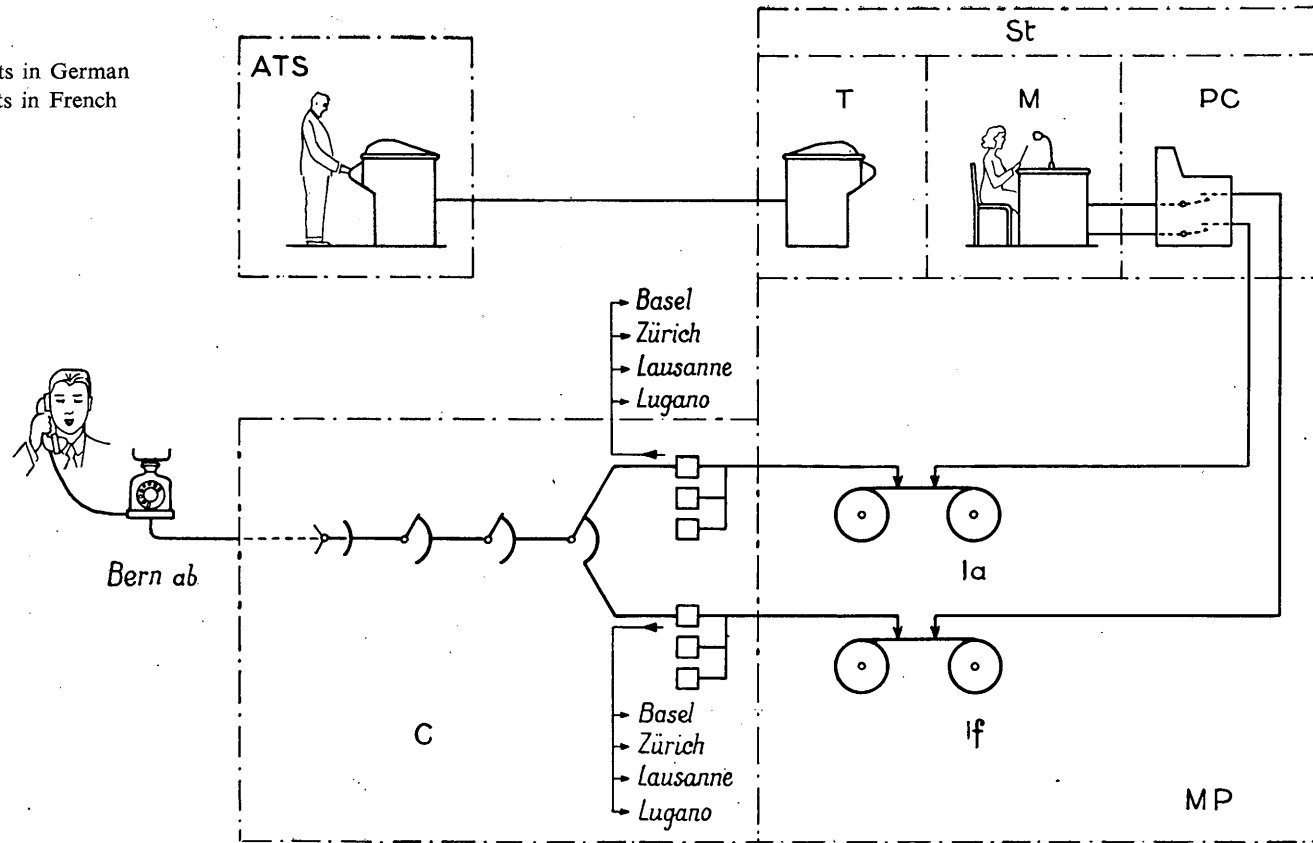


FIGURE 2. — Schematic of Telephone Information Service

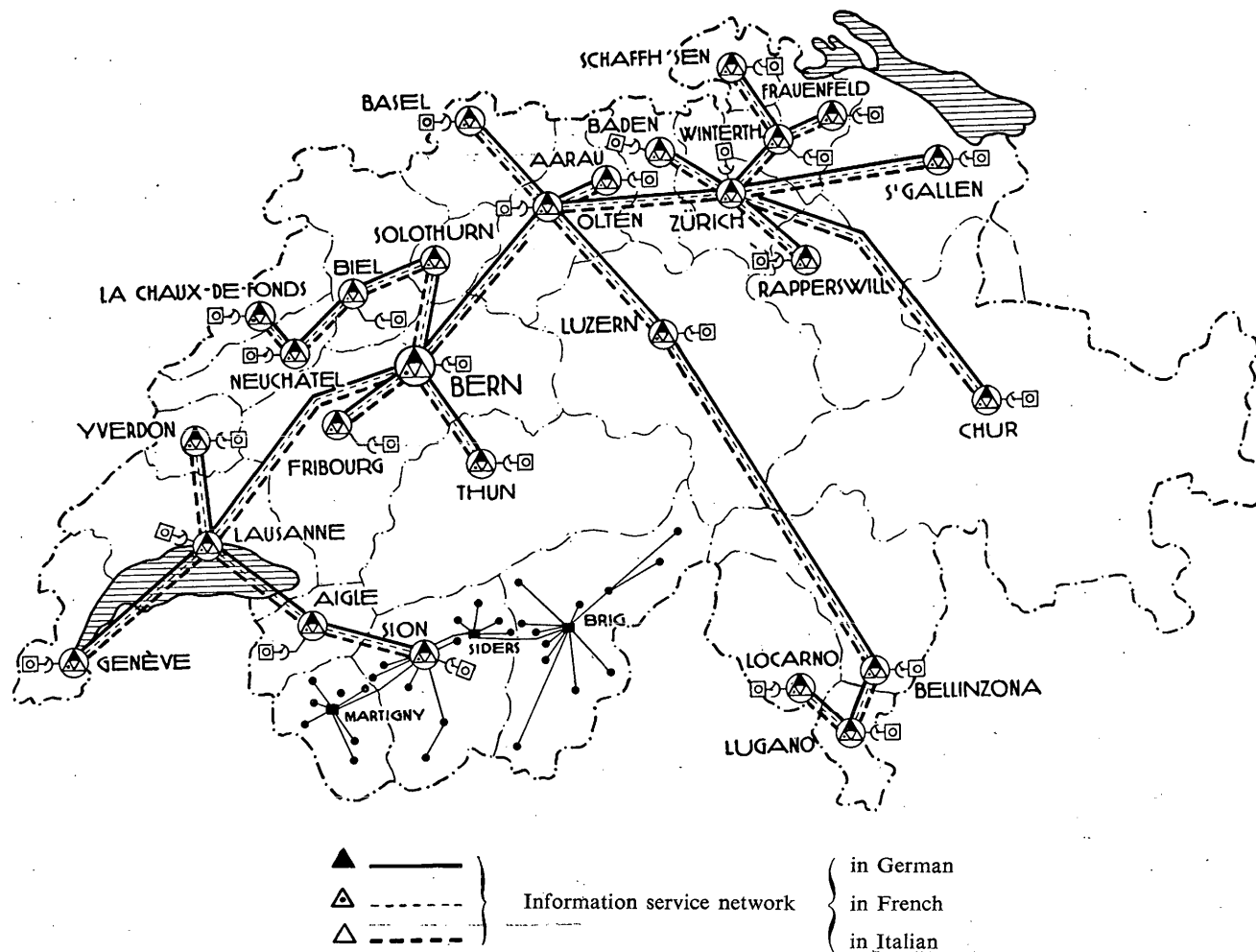


FIGURE 3. — *Trunk telephone network for transmission of the modulation (Telephone Information Service)*