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The VIIth Plenary Assembly of the International Telegraph Consultative Committee

(Arnhem, 5-13 June, 1953)

(Translation)

At its 6th meeting, which was held in Brussels in 1948, the CCIT Plenary Assembly had decided to hold its 7th meeting in 1951. In 1950, however, it was decided that this 7th meeting should be postponed until 1953 and in 1951 only the Study Groups met in Geneva. An account of their work appeared in the July 1951 number of the *Telecommunication Journal*.[1]

(See the photograph in the French Part, page 26f)

The formal inaugural meeting of the CCIT VIIth Plenary Assembly.

In 1953, the Administration of the Netherlands was good enough to renew the invitation it had already extended to the CCIT, namely, that the VIIth Plenary Assembly should be held in the Netherlands, and it offered the pleasant city of Arnhem as the place of the meeting.

The Arnhem municipal theatre was chosen for this purpose. Accommodation of a CCI Plenary Assembly in a theatre gave rise to some unusual problems for which the Dutch Administration found some most ingenious solutions.

The auditorium was used for plenary meetings and for meetings of the larger Study Groups. Delegations were seated in the stalls and the pit, while the Chairman's dais was on the stage in front of the simultaneous interpretation booths. The boxes were made available to the guest international organizations, while the balconies were open to the public. The equipment for simultaneous interpretation in English, French and Spanish—booths and transportable distribution units—was provided by the Union. It was assembled and maintained by technicians from the Dutch Administration, who managed to adapt it most successfully to the characteristic shape of a theatre auditorium. This equipment gave entirely satisfactory service throughout the meeting.

[1] *Telecommunication Journal*, 1951, No. 7, page 258.

The lounges of the first and second balconies had been turned into committee rooms, with consecutive interpretation in English and French.

The secretariat, the translators and the supplies were accommodated in the actors' dressing rooms, which were numerous and well-lit. The CCIT secretariat was, it is true, a little cramped and hemmed in with documents, but it is accustomed to working with limited resources. The typists were housed in the greenroom and the mimeograph operators were in the basement, where it was cool.

Delegates, of course, enjoyed the usual facilities : document distribution, post office, with telegraph and telephones, cloak-rooms, reception and information desk and bar, while a series of television receivers showed the Coronation of Her Majesty Queen Elizabeth II.

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The administrations of the following thirty countries sent delegations to the Assembly :

Australia ; Austria ; Belgium ; Brazil ; People's Republic of Bulgaria ; Cambodia ; Canada ; China ; Denmark ; Spain ; United States of America ; France ; Ireland ; Italy ; Japan ; Luxembourg ; Norway ; New Zealand ; Pakistan ; Netherlands ; Federal German Republic ; Roumanian People's Republic ; Federal People's Republic of Yugoslavia ; United Kingdom of Great Britain and Northern Ireland ; Sweden ; Switzerland ; Oversea Territories of the French Republic ; Turkey ; Union of South Africa ; Union of Soviet Socialist Republics.

The following recognized private operating agencies sent representatives to Arnhem :

Radio Austria A.G. ; Italcable ; Great Northern Telegraph Company ; Portuguese Radio Marconi Company ; *Deutsch-Atlantische Telegraphengesellschaft ;* Nippon Telegraph and Telephone Corporation ; Cable and Wireless Ltd. ; *Groupe des Compagnies françaises de câbles ; Compagnie générale de télégraphie sans fil ;* Kokusai Denshin Denwa.

Industrial organizations were represented either in the official delegations sent by administrations to the Study Groups, or independently, or partly in those delegations and partly independently (as for example, in the case of the Federal German Republic). In this

way, representatives of 10 such concerns were separatly represented the Study Group meetings (1 Belgian, 1 German, 1 Italian and 7 French).

The following eight international organizations sent observers :

International Air Transport Association ; International Union of Producers and Distributors of Electric Power ; International Civil Aviation Organization ; International Chamber of Commerce ; International Criminal Police Commission ; World Meteorological Organization ; CCIF ; CCIR.

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The Study Groups met from Tuesday, 26 May 1953, to Sunday, 7 June. The Plenary Assembly and its committees met from Friday, 5 June, to Saturday, 13 June. There were ten plenary meetings.

The inaugural ceremony of the Plenary Assembly was held on Friday, 5 June, at 11 o'clock, with Mr. J. Algera, *Minister van Verkeer en Waterstaat*, in the Chair. Mr. Algera was assisted by Mr. Quarles van Ufford, Her Majesty's Commissioner for the Province of Gelderland, and by Mr. L. Neher, Director General of the PTT.

Mr. van der Toorn, head of the Netherlands Delegation, was Chairman of the Assembly, while at the inaugural ceremony the Assembly elected Mr. Webster, head of the United States Delegation, as Vice-Chairman.

The Assembly set up a Budget Committee (Chairman : Mr. Wyss, Switzerland) and two working groups to consider the advisability of amalgamating the CCIF and the CCIT. Their Chairmen were Mr. Collet (France) and Mr. O'Broin (Ireland).

The Chairmen of the Study Groups (the terms of reference of which had been defined at Brussels) were as follows :

Study Groups

I	Telegraphy, General technique	Mr. Albanese (Italy)
II	Technical aspects of the establishment, operation and maintenance of telegraph channels	Mr. van Lommel (Netherlands)
III	Technical aspects of telegraph apparatus	Mr. Pellé (France)
IV and joint CCIT/CCIR Study Group	Phototelegraphy and facsimile	Mr. Jolley (United Kingdom of Great Britain and Northern Ireland)
VI	Vocabulary, symbols, classification	Mr. Collet (France)
VII	Technical aspects of switching in the service of start-stop apparatus	Mr. Jolley (United Kingdom of Great Britain and Northern Ireland)
VIII	European telegraph network operated by start-stop apparatus	(Interim Chairman) Mr. Besseyre, CCIT.
IX	Operational methods and quality of service	(Interim Chairmen) Mr. Besseyre, CCIT ; Mr. L. V. Lewis, General Secretariat.
X	Services offered to users and rates other than telex rates	Mr. Gneme (Italy)
XI	International service of telegraph subscribers and rates relating thereto	Mr. Perry (Netherlands)

There was no Editorial Committee.

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The VIIth Plenary Assembly of the CCIT had on its agenda the normal programme of a CCI Assembly : the issuing of recommendations based on proposals submitted by the Study Groups, the choice of the studies to be pursued until the VIIIth Plenary Assembly, and the constitution of the Study Groups. It had in addition a special question to consider : the advisability of amalgamating the CCIF and the CCIT.

* * *

Progress made from 1949 to 1953 [1]

As regards general telegraphy, the question of telegraph distortion dominated the work of Study Group I. Up to 1948, the CCIT had been concerned solely with distortion affecting the characteristic instants of a telegraph modulation or restitution. This presupposed, of course, that the characteristic instants indicated by the code and the text to be transmitted were present in the modulation or restitution, without omission or addition. The assumption was plausible with wire telegraphy as it then was, but is untenable for wireless telegraphists. Their first concern, before studying the position of the characteristic instants of a telegraph modulation, is to know whether all the desired characteristic instants actually are present, without omission or addition.

[1] The VIIth Plenary Assembly, Arnhem, made great use of the work done by the Study Groups in Geneva (March, 1951) ; hence readers desiring a general picture of the questions considered should consult the July 1951 number of the Telecommunication Journal since, to avoid repetition, the work done in March 1951 and confirmed by the Arnhem Assembly has not been described here.

Hence the notion of defective modulation introduced into Recommendation B.1. A modulation is defective when the characteristic instants obtained do not appear in the same order as the characteristic instants desired, or, in other words, when characteristic instants disappear or are added. Obviously, we must be able to set a measurable value to defective modulation thus defined. Quantitative measurement of distortion is by no means easy ; the most accurate method would be to count the characteristic instants added and the characteristic instants missing, adding the two together and finding the relation between the number thus obtained and the number of characteristic instants which, in theory, should have been present in the particular modulation. This method, however, does not seem very practical ; the CCIT, therefore, went no further than to define the efficiency factor to be used in assessing how far a restitution is defective as the ratio of the number of correctly translated signals to the number of signals transmitted, the keying being correct. Question 5, however, leaves room for a revision of this definition.

Obviously, it is only after the quality index of a modulation has been estimated that additional information on the quality of that modulation can be provided by measuring the degree of telegraph distortion. The note accompanying the definition of defective modulation in Recommendation B.1. shows that defective modulation will inevitably entail false translation, whereas telegraph distortion may entail false translation according to its degree and the quality of the receiver. Here is the note :

" *Note :* a defective modulation (or restitution) does not of itself enable the transmitted text (or texts) to be reconstituted, whereas a modulation (or restitution) which is not defective according to this definition does not necessarily permit the reconstitution of the text (or texts), this possibility depending upon the degree of distortion which the modulation (or restitution) suffers."

As the work done by Study Group II in 1951 had been very thorough, the VIIth Plenary Assembly had only slight changes to make in the proposals issued in 1951 for the maintenance of the telegraph network. Henceforward, the CCIT's activities in this connection will bear essentially on disturbance affecting telegraph channels on voice-frequency telephone circuits, carrier current or coaxial cable ; such disturbance occurs so often that telegraphists (and perhaps telephonists too) have been somewhat surprised. The initiative having been taken by the CCIF, telephonists have now tackled the question seriously. Numerous statistics have been obtained, and the vibration test method of source-detection evolved by the General Post Office has already brought about an appreciable reduction in disturbance.

As regards telegraph transmission equipment, mention should be made of an inquiry into the standardization of voice-frequency telegraph equipment using frequency modulation. Until then, a good many administrations had been of the opinion that because of its high cost as compared with amplitude modulation equipment, frequency modulation equipment would have to be reserved for special cases. Manufacturers have now announced their ability to offer frequency modulation equipment at prices comparable with those of amplitude modulation equipment, with the result that administrations have been led to consider the possibilities of frequency modulation for normal voice-frequency telegraphy purposes.

* * *

On start-stop teleprinters some important recommendations were issued by the VIIth Plenary Assembly.

The CCIT had been well aware that international regulations laying down the modulation rate of start-stop teleprinters would be of considerable interest, from both the technical and the economic points of view ; as early as its second meeting (Berlin, 1929), it had recommended a speed of 50 bauds. That recommendation was followed by all the administrations which then took part in CCIT activities, but the resulting standardization left untouched a big user of start-stop teleprinters—the United States. Until quite recently, this was no great disadvantage, but to-day the start-stop teleprinter service is operated across and above the oceans and TEX/TELEX subscribers can correspond with stations in Europe, on request, from New York or Washington. Adoption of a single modulation rate would have considerably simplified network switching problems. However, it has not so far been possible to reach agreement, and although Recommendation C.4 advises that apparatus incapable of complying with the recommended modulation rate of 50 bauds should be withdrawn from international service as soon as possible, Recommendation C.5 opens the door to the co-existence of several modulation rates in a preamble which deserves quotation :

" The CCIT

considering :

1. that the standardized modulation rate recommended for start-stop apparatus employed in international (including intercontinental) service is 50 bauds, in accordance with Recommendation C.4 ;

2. that there are nevertheless certain areas (notably in the USA) in which a different modulation rate for start-stop apparatus is employed ;

3. that, even though it is recognized that universal adoption of a standardized modulation rate would be advantageous in the inter-continental service, it is not possible, at present, to secure universal adoption of a standard ;

4. that it is essential to do everything possible to facilitate the establishment of inter-continental services, notwithstanding the differences in modulation rates which may exist between the start-stop apparatus employed ;

5. that there are in existence methods, employing automatic storage equipment in the circuit, which enable start-stop apparatus having different modulation rates to interwork."

It is certainly not without keen regret that CCIT Study Group III found itself obliged to submit this Recommendation to the Assembly for approval, but point 4 of the above preamble, the result of steady progress made by inter-continental communications, was decisive.

Mention should also be made of the fact that the stop element of the transmitting cycle of a start-stop apparatus should be equal to at least 1.4 times the unit interval. This recommendation was entailed by investigation of communications with regenerative repeaters. Hence the 7-unit cycle is no more.

Telex progress throughout the world is making the use of the automatic answer-back unit more and more necessary. Recommendation C.11 confirms that the secondary of " D " should be reserved in the international service for operating the answer-back unit.

A question which has given rise to a good deal of discussion since the Brussels meeting is an extension of the facilities offered by Alphabet No. 2, thanks to a third inversion operated by combination 32. Inquiries made of operating administrations and companies have failed to reveal any great desire for such an extension. The VIIth Plenary Assembly did not commit itself for the time being ; it made combination 32 available to administrations for their national service (Recommendation C.12), but at the same time, in Questions 35 and 36, it left the door open for a third inversion and use of combination 32 in the international service.

Study of " radio teleprinter " systems and the interworking of start-stop and synchronous systems did not lead to any definite proposals by the Assembly.

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As regards facsimile equipment, Arnhem saw the first meeting of the CCIT-CCIR joint Study Group on phototelegraphy. The report submitted by this Group to the Plenary Assembly appears on page 188 of the " Documents ".

As regards phototelegraph apparatus (i.e., apparatus capable of receiving half-tone pictures), the diversity of equipment used throughout the world, the diversity of the dimensions of the pictures to be transmitted, and the widely different transmitting conditions by wire and radio make it more and more difficult to reach agreement on a single standard. Recommendation D.1, on the standardization of phototelegraph apparatus, which replaces Recommendation 681, expresses the opinion that new equipment brought into use in future should possess at least one of the groups of characteristics accepted by the CCIT. An inquiry is shortly to be undertaken to review the question of drum length (Question 48), and the CCIT has asked that a list of stations taking part in the phototelegraph service be drawn up (Recommendation D.5), in order that the whole question of drum length may be set on a firm basis.

As regards facsimile machines receiving documents in two contrasted tones only—black and white, for example —the old Question VI.8 has become Question 46, in which the use of such equipment for transmission of public telegrams, its use for transmission of commercial or business documents (in this connection it seems that there is a tendency towards the use of phototelegraph equipment), and the matter of facsimile equipment for large-size documents (maps, for example) have been made into separate questions.

* * *

Rules were defined for international telex signalling ; Recommendation E.1 states what signals are to be used, but for the constitution of the signal, in the case of four signals out of eight, no standardization could be obtained, because of the different switching systems used in national networks. However, it proved possible to classify national networks in two groups, and the types of signals which might be used by those two groups were indicated.

The use of switched regenerative repeaters raised the question of the transmission by these repeaters of switching signal pulses—a question which has a bearing on the standardization of telex dials and on the characteristics of regenerative repeaters. Since, in addition, some administrations use signals from the start-stop code emitted by the teleprinter for dialling control (thus doing away with the dial), the problem is complex and its solution had to be deferred (Questions 27, 55 and 56).

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The study of the European international switched network for the public service did not make much headway between 1949 and 1953 ; it was retained and more clearly defined in Question 57. The idea of

constituting a single network for the telex service and the public service was abandoned.

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In the operating field, former Recommendation 801—now F.1—was amended in such a way that the times of transmission of telegrams noted by the receiving country and classified by transmitting country are to be communicated to the transmitting country for its own information, while Study Group IX and the Director of the CCIT will review the situation periodically and recommend methods of improving transmission times.

New recommendations on operating methods are few but the volume of studies to be continued or undertaken is, on the other hand, considerable: standardization of page-printing reception in the public service (Question 58), the study of which has made great progress thanks to precise proposals from Switzerland and Sweden ; the reception of telegrams on forms prepared in advance (Question 59) ; use of reperforators (Question 60) and the assembly, with a view to future combination, of the various service codes used internationally in both wire and radio communications (Question 61).

* * *

Recommendation G.4 proposes a new scale of charges for phototelegrams in the public service ; generally speaking, these charges are higher than those in the Telegraph Regulations. In the early days of the phototelegraph service, administrations had assessed costs on the basis of an assumed volume of traffic that has not been confirmed by experience. Charges now have to be adjusted to fit the facts.

On the whole, the VIIth Plenary Assembly of the CCIT did not take a favourable view of reductions in charges in favour of certain categories of users : although Recommendation G.5 shows that agreement could not be reached between the advocates and the opponents of a reduction for meteorological telegrams, a very large majority were unwilling to propose reductions for the lease of circuits to the meteorological service (Recommendation H.7).

The study of proposals by Portugal and Denmark for a revision of the rates for telegrams in the public service had encountered little enthusiasm in Study Group X. The tariff reforms of the 1949 Paris conference were too fresh in people's minds. But this question is never exhausted and several proposals for further study were accepted by the Arnhem Assembly—a study of rates and a study of the related question, word-counts (see Question 63).

Much was written and said on rates for the lease of transit circuits to administrations. The question is still being studied and is of great topical interest (Questions 64, 65 and 67).

The VIIth Plenary Assembly did not deal with Resolutions 8 and 11 of the Paris Conference concerning telegraph traffic to be routed over the fixed telecommunication network of the aeronautical service except to take note of Administrative Council Resolution 284 (Arnhem Documents, page 189) which, in effect, takes the study of this matter out of the hands of the CCIT Study Groups.

* * *

Certain details were amended in the Recommendation which acts as the Telex Regulations (Recommendation H.1) ; the provisional recommendation issued in 1951 concerning the lease of circuits to replace Resolution No. 9 of the Paris Conference (1949) was confirmed, which does not mean that discussion of the matter is now closed : Question 73 requires the study of the retransmission of messages, multiple lease charges, reductions for the lease of several circuits to the same user, etc.

As regards telex, attention was turned to improving the speed of the service (Questions 74, 75, 76), settling the accounting problems raised by the use of auxiliary and emergency routings and by the use of automatic dialling (Questions 77, 78, 79, 81). Lastly, a study of the costs of telegraph circuits and telex calls was asked for, with a view to a possible revision of telex charges and leasing rates (Questions 71, 72).

* * *

The CCIT VIIth Plenary Assembly gave much consideration to the question of telegraph statistics. The General Telegraph Statistics prepared annually by the ITU General Secretariat are somewhat confused in Part III (telegraph network) and Part V (apparatus) and in addition give a wrong idea of telegraph traffic : in actual fact, they merely cover that part of the traffic which is now becoming more and more widely known as public traffic (see draft definition, Arnhem Documents, page 219) : the considerable expansion of telex networks and leased circuits is causing a continuous drop in public traffic, clearly shown in the General Statistics which, on the other hand, entirely ignore the increase in traffic between telex subscribers and over leased circuits.

The CCIT was thus called upon to study the revision of these General Statistics (Question 62) ; in the meantime it recommended the preparation of statistics for the telex service (Recommendation H.4) and advocated the study of how to prepare a descriptive list of telex circuits (Question 78).

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The Arnhem Assembly took advantage of the experience gained since 1949 to improve the working methods of the Plenary Assembly and the Study Groups (Recommendation A.1) and to review the publication of CCIT documents (Recommendation A.2). It thoroughly revised the graphical symbols used in telegraphy—a revision that was necessary, as the symbols in use dated back to 1935 (Recommendation I.4). An interesting new Recommendation is to be found in Section B of the Annex to Recommendation I.4. It deals with the representation of the two positions in a two-condition telegraph system : rejecting the old expressions start, stop, mark and space which led to considerable confusion and refusing to use the signs 0 and 1, often used by specialists in binary calculations and equally liable to lead to confusion, the Assembly recommended the use of the letters A and Z, A (first letter of the alphabet) being the position which corresponds to the start signal of a standardized start-stop apparatus and Z (end of the alphabet) being the position corresponding to the stop signal.

On the other hand, for the definitions of terms used in telegraphy, the Assembly followed Study Group VI with caution and the definitions prepared by that Study Group were booked for subsequent study (Questions 50 and 51).

Amalgamation of the CCIF and the CCIT

As the outcome of Resolution No. 2 of the Buenos Aires Plenipotentiary Conference, the agenda of the CCIT VIIth Plenary Assembly included the detailed study of the possibility of amalgamating the CCIT and the CCIF and the issue of a Recommendation on the subject for the next telegraph and telephone administrative conference.

A detailed account of the relevant discussions and the texts of the resolution adopted with the reports annexed to the resolution are published in the " Documents of the VIIth Plenary Assembly of the CCIT ". The final resolution, adopted by 16 votes to 11, states that amalgamation would not be in the best interests of the Union but shows what precautions should be taken to provide the maximum safeguard for telegraphy if the amalgamation were to take place in spite of the opinion of the CCIT.

In favour of the resolution, i.e., *against* amalgamation : 16 delegations :

Australia, Austria, Belgium, Cambodia, Canada, China, Spain, United States of America, France, Japan, Luxembourg, New Zealand, Netherlands, Portugal, United Kingdom, Switzerland.

Against the resolution, i.e., *in favour* of amalgamation : 11 delegations :

P.R. of Bulgaria, Denmark, Italy, Ireland, Norway, Federal German Republic, FPR of Yugoslavia, Roumanian PR, Sweden, Turkey, USSR.

Abstention : 1 delegation :

Union of South Africa.

Attention should also be drawn to the fact that the VIIth Plenary Assembly studied this matter of amalgamation with great thoroughness. Practically all the delegations expressed their views and since one of the arguments often brought forward in favour of amalgamation was the saving that would be effected in the combined expenses of the CCIF and the CCIT and the simplification of the work which would arise from the amalgamation of Study Groups dealing with related questions, the Assembly set up two working groups.

Group A had to examine the studies one by one to find out whether there was any overlapping as between the CCIF and the CCIT—they found none. Some studies had both telegraph and telephone aspects (e.g. maintenance and establishment of networks) but arrangements for the requisite collaboration had already been made by the Directors of the CCIF and the CCIT.

Group B had to study the financial effects of amalgamation and reached the conclusion that amalgamation would mean additional expenditure.

It is interesting to note that the CCIT Plenary Assembly had instructed the Interim Director to study whether, under the Buenos Aires Convention, specialized telegraph Plenary Assemblies could, if necessary, be held in case of amalgamation. The Interim Director's report, approved by the Plenary Assembly (Arnhem Documents, page 193), concluded in the affirmative.

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The VIIth Plenary Assembly kept the same Study Groups that had been working between Brussels and Arnhem. Study Group V (Protection) was definitely abolished. The Chairmen and Vice-chairmen of the Study Groups were nominated in a personal capacity by application of Chapter 15 of the General Regulations annexed to the Buenos Aires Convention.

Lastly, the VIIth Plenary Assembly decided on a new classification of CCIT Recommendations.

The Recommendations were classified in groups and given index letters as follows :

A Organization of the CCIT and procedure
B Transmission
C Alphabetic telegraph apparatus

D Facsimile
E Telegraph switching
F Working methods
G Regulations and tariffs
H Telex service and leased circuits
I Vocabulary, symbols, definitions, etc.

In each group the Recommendations bear numbers from a continuous series according to the date of their issue ; the serial number is preceded by the group index letter.

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Finally, before dispersing, the VIIth Plenary Assembly proposed that the VIIIth Assembly should meet in Geneva during the first half of 1956.

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There is no denying that during the first three weeks at Arnhem delegates had plenty of work to do ; fortunately, however, the Administration of the Netherlands provided some very pleasant outings. During these hours of relaxation, the delegates were free to admire the artistic wealth, the technical resources and the attractive landscape of Holland. It was even the right season to appreciate the Dutch gastronomic specialities (I am thinking particularly of the arrival of " new herring ").

But the work going on in the streets of Arnhem and the huge stretches of waste land reminded delegates that the war had swept over the fair features of the Arnhem countryside ; the strenuous efforts of the Dutch people to overcome the ravages of war, together with the catastrophe that had befallen them only a few months before the meeting, were plain for all to see and constitute not the least among the lessons that could be learned at the VIIth Plenary Assembly of the CCIT.

J. Besseyre.