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INTERNATIONAL TELECOMMUNICATION UNION

REPORT
ON THE ACTIVITIES OF
THE INTERNATIONAL
TELECOMMUNICATION UNION
IN
1977

Geneva 1978

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1. INTRODUCTION

This Report is published in accordance with No. 289 of the International Telecommunication Convention (Malaga-Torremolinos, 1973), which provides that the Secretary-General shall "... prepare an annual report on the activities of the Union which, after approval by the Administrative Council, shall be transmitted to all Members".

2. MEMBERSHIP OF THE UNION

1. In 1977, the following two countries became Members of the Union:

the Republic of San Marino and
the Republic of Djibouti.

2. At 31 December 1977, the number of Members of the Union was 154, namely:

- a) the 140 countries mentioned in Annex 1 to the Malaga-Torremolinos Convention, 1973,
- b) the following 2 countries which became Members on the deposit of an instrument of accession to the International Telecommunication Convention of Montreux, 1965:

| | |
|---------------------------------------|-----------------------------|
| | which became a Member on |
| Republic of the Gambia | 27. 5.74 |
| Commonwealth of the Bahamas | 19. 8.74 |

- c) the following 12 countries which became Members on the deposit of an instrument of accession to the International Telecommunication Convention of Malaga-Torremolinos, 1973:

| | |
|--|-----------------------------|
| | which became a Member on |
| State of Bahrain | 1. 1.75 |
| Democratic People's Republic of Korea | 24. 9.75 |
| Papua New Guinea | 31.10.75 |
| People's Republic of Mozambique | 4.11.75 |
| State of the Comoros | 5. 1.76 |
| Republic of Guinea-Bissau | 15. 1.76 |
| Republic of Surinam | 15. 7.76 |
| Democratic Republic of Sao Tome and Principe | 1. 9.76 |
| Republic of Cape Verde | 10. 9.76 |
| People's Republic of Angola | 13.10.76 |
| Republic of San Marino | 25. 3.77 |
| Republic of Djibouti | 22.11.77 |

3. During 1977, 34 countries ratified the International Telecommunication Convention, Malaga-Torremolinos, 1973, and 3 countries acceded thereto. On 31 December 1977, the total number of ratifications was 97 and of accessions, 28. A reminder has been sent to countries which have not yet ratified the Convention or acceded thereto.

4. The position on 31 December 1977 of Members with respect to the Malaga-Torremolinos Convention, 1973, and to the Administrative Regulations annexed hereto is shown in Table I of Annex 1 to this Report. Annex 1 also gives information relating to a number of other conventions and agreements concerned with telecommunications.

3. THE ADMINISTRATIVE COUNCIL

3.1 The 32nd Session of the Administrative Council was held at ITU Headquarters from 23 May to 10 June 1977.

It was attended by representatives of all thirty-six Members of the Council, i.e.:

Algeria (Algerian Democratic and Popular Republic), Germany (Federal Republic of), Saudia Arabia (Kingdom of), Argentine Republic, Australia, Brazil (Federative Republic of), Cameroon (United Republic of), Canada, China (People's Republic of), Egypt (Arab Republic of), Spain, United States of America, Ethiopia, France, Hungarian Peoples's Republic, India (Republic of), Iran, Italy, Japan, Lebanon, Malaysia, Morocco (Kingdom of), Mexico, Nigeria (Federal Republic of), Poland (People's Republic of), Roumania (Socialist Republic of), United Kingdom of Great Britain and Northern Ireland, Senegal (Republic of the), Sweden, Switzerland (Confederation of), Tanzania (United Republic of), Thailand, Trinidad and Tobago, Union of Soviet Socialist Republics, Venezuela (Republic of), Zaire (Republic of).

3.2 Mr. João Santelli Jr. (Federative Republic of Brazil) and Mr. Heinrich Ludwig Venhaus (Federal Republic of Germany) were elected Chairman and Vice-Chairman of the Council respectively, and the following Committees were set up:

Committee 1 – Finance

Chairman: Mr. José J. Hernández-G. (México)

Vice-Chairman: Mr. T.V. Srirangan (India)

Committee 2 – Staff and Pensions

Chairman: Mr. Tom Ulrik Meyer (United Kingdom)

Vice-Chairman: Mr. Mohamed El Aoud (Morocco)

Committee 3 – Technical Cooperation

Chairman: Mr. J. O'Neill Jr. (United States of America)

Vice-Chairman: Mr. Jean Jipguep (United Republic of Cameroon)

The Council also set up the following working groups:

Working Group PL-A *Chairman:* Mr. Alioune Mbodji Dione (Senegal)
(Resolutions and
Decisions)

Working Group PL-B *Chairman:* Mr. Donald E. Baptiste (United Kingdom)
(Administrative
Radio Conferences)

Working Group PL-C *Chairman:* Mr. N.J. Mazzaro (Argentine Republic)
(Participation in meetings
of the international
consultative committees)

3.3 The resolutions and decisions adopted by the Council are summarized below:

3.3.1 *Financial matters*

3.3.1.1 *Financial Operating Report of the ITU for 1976*

The Council approved the Financial Operating Report and the Management Report of the ITU Staff Superannuation and Benevolent Funds for 1976.

(Resolution No. 784)

3.3.1.2 *External Audit of ITU accounts for the period 1 January to 31 December 1976*

The Council approved the accounts of the ITU for the period 1 January to 31 December 1976 as drawn up and as audited by the External Auditor of the Swiss Confederation.

(Resolution No. 785)

3.3.1.3 *Budgets of the Union for 1978*

The budgets for 1978 were approved. For details, see Section 7.2 of this report.

(Resolution No. 799)

The Council decided that the credit of 190,000.— Swiss francs for three established posts not filled in 1976, which was brought forward at the end of 1976 in the account for credits granted for previous years to cover any costs entailed by retroactive post upgrading, should be used in partial payment of common services supernumerary staff in 1977.

(Decision No. 380)

The Council decided that the expenditure of 719,000.— Swiss francs, 1973 value, for supernumerary staff to be recruited for conferences and meetings should be charged to the operating budget.

(Decision No. 379)

3.3.1.4 *Operational Fund at the disposal of the Administrative Council*

The Council decided to set up an Operational Fund available exclusively to the Council and to credit to it the proceeds from the sale of ITU official postage stamps. It also decided to amend the Union's Financial Regulations by adding a new Article 47 bis.

The Secretary-General is instructed to report annually on the operations and the position of the "Operational Fund" in his Financial Operating Report.

(Resolution No. 798)

The Council decided to use the available sums in the Operational Fund at the disposal of the Administrative Council for the purposes of technical cooperation.

(Decision No. 381)

3.3.1.5 *Revision of the Financial Regulations of the Union*

The Council amended Article 30, paragraph 3 b) of the Financial Regulations concerning the account for the simultaneous interpretation equipment and other sound reproduction equipment. Henceforth this account is to be credited with the income from the renting of rooms and offices in the ITU buildings and debited with the current upkeep expenses.

(Resolution No. 797)

3.3.1.6 *Sums due*

Two of the Union's debtors having ceased to exist (ENTEL SA, Brasilia, which owed 39,660.70 Swiss francs, and Navsat Systems Inc., Salt Lake City, which owed 40,351.55 Swiss francs), the Council decided that the sums due should be written off and offset by a withdrawal of an equivalent amount from the ITU Reserve Account.

(Resolutions Nos. 786 and 787)

3.3.2 *Staff and pension matters*

3.3.2.1 *Grading of posts*

The Council decided to approve the report of the grading specialist and the proposals contained in the annexes to the report. The new grading of posts will come into force with retroactive effect from 1 January 1977.

(Resolution No. 791)

The Council decided to instruct the Secretary-General to prolong the employment of the grading specialist until completion of his tasks, but in any case not beyond 30 June 1978.

(Decision No. 378)

3.3.2.2 *Geographical distribution of Union staff*

The Council decided that, pending the examination of this question by the next Plenipotentiary Conference, appropriate measures should be taken by the Secretary-General to fill vacant posts in the professional category on the basis of fixed-term appointments. It further recommended that, in considering lists of candidates, the Secretary-General and the heads of the permanent organs should give preference to applicants from regions inadequately represented in the permanent organs of the Union. Lastly, it decided that a larger number of young telecommunication specialists should be engaged by the ITU on the basis of international advertising of posts whenever vacancies occurred in grades P.1 and P.2.

(Resolution No. 795)

3.3.2.3 *Salaries and allowances of elected officials*

In line with the action taken within the framework of the common system following the decisions of the United Nations General Assembly at its thirty-first session concerning the salaries, the scale of post adjustments and the dependency allowances applicable to appointed staff in the professional and higher categories as from 1 January 1977, the Council approved the salaries and post adjustments of elected officials with effect from 1 January 1977 with the consequential amendments to be made to Regulation II.2 (Post adjustments) of the Staff Regulations for Elected Officials.

(Resolution No. 788)

3.3.2.4 *Amendments to Staff Regulations and Staff Rules*

The Council decided that, with immediate effect, all references to service before 1 January 1960 and membership in the Staff Superannuation and Benevolent Funds shall be deleted wherever they occur in the Staff Regulations and Staff Rules for Elected Officials; it also authorized the Secretary-General to amend the Staff Regulations and Staff Rules for Elected Officials and/or Staff Regulations and Staff Rules applicable to Appointed Staff in the future, without seeking prior approval of the Administrative Council in respect of those amendments which are necessary to delete obsolete references or to make minor changes in the editing which do not entail changes in substance.

(Resolution No. 792)

3.3.2.5 *Membership of the ITU Pension Committee*

The following persons were appointed to represent the Council on the ITU Staff Pension Committee:

| Members | Alternate Members | Term |
|---------------------|---------------------------|---|
| Mr. C. Baudazzi | Mr. J. Dunin | Until the end of the 33rd Ordinary Session of the Council |
| Mr. S. Friedland | Mr. J.A. Msambichaka | Until the end of the 34th Ordinary Session of the Council |
| Mr. F. Molina Negro | Mr. C.J.Martínez González | Until the end of the 35th Ordinary Session of the Council |

(Resolution No. 790)

3.3.3 *Administrative Conferences*

3.3.3.1 *World Administrative Radio Conference (1979)*

3.3.3.1.1 After consulting the Members of the Union, the Council decided:

1. that the Conference shall be convened in Geneva on 24 September 1979 for a duration of ten weeks;
2. that the agenda of the Conference shall be as follows:
 - 2.1 to review and, where necessary, revise the provisions of the Radio Regulations relating to terminology, the allocation of frequency bands and the associated regulations (Articles of the Rearrangement of the RR: N1, N2, N3, N5, N6, N7, N8, N25, N26, N27, N28 (Section I), N29, N33 (Section IV.B) and N47 and the related Appendices not applying to a single service);
(Articles of the 1976 edition of the RR: 1 to 6, Sections I, II, III, VI, VII, VIII and IX of Article 7)
 - 2.2 to review and, where necessary, revise the provisions applicable to the coordination, notification and recording of frequency assignments except those Articles relating to a single service (Articles of the Rearrangement of the RR: N11, N12 and N13 and the related Appendices, but not Articles N14 and N15);
(Articles of the 1976 edition of the RR: 9 and 9A, but not 9B and 10)
 - 2.3 to review and, where necessary, revise the other Articles applicable to more than one service (Articles of the Rearrangement of the RR: N4, N16 to N24 and the related Appendices not applying to a single service) and to review the provisions applicable to miscellaneous stations and services (Articles of the Rearrangement of the RR: N30, N31, N32, N33 (Sections I, II, III and IV.A) and N39 and the related Appendices);
(Articles of the 1976 edition of the RR: 12 to 20; 41 to 44)
 - 2.4 to make any necessary consequential editorial amendments to other provisions of the Radio Regulations and the Additional Radio Regulations resulting from the action taken under agenda items 2.1, 2.2 and 2.3 above;

- 2.5 to review the report on the activity of the IFRB and revise, where necessary, the provisions relating to its methods of work and internal regulations (Articles of the Rearrangement of the RR: N9 and N10);
(Articles of the 1976 edition of the RR: 8 and 11)
- 2.6 to study the technical aspects for the use of radiocommunications for marking, identifying, locating and communicating with the means of medical transport protected under the 1949 Geneva Conventions and any additional instruments of these Conventions;
- 2.7 to take account of Resolution No. Sat-10 of the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977, on the possible Rearrangement of the Radio Regulations and Additional Radio Regulations, to make such consequential changes as may be necessary to harmonize the Radio Regulations as well as the Additional Radio Regulations and to undertake any further necessary refinement and deletion of superfluous or redundant provisions;
- 2.8 to consider the proposals based on the CCITT studies carried out in accordance with Resolutions Nos. Mar2 – 22 and 23 and to take appropriate decisions;
- 2.9 to consider the resolutions and the recommendations adopted by administrative radio conferences, to take such action as may be considered necessary and to adopt such new Resolutions and Recommendations as may be necessary;
- 2.10 to propose to the Administrative Council and to the next Plenipotentiary Conference a programme for convening future administrative radio conferences to deal with specific services;
- 2.11 to provide, for the benefit of future administrative radio conferences, such guidelines as may be found necessary for optimum use of the frequency spectrum.

(Resolution No. 801)

3.3.3.1.2 *Preparation for the World Administrative Radio Conference (1979)*

The Council decided to invite the CCIR:

1. to carry out the studies necessary to ensure timely provision of the technical information likely to be needed as a basis for the work of the Conference;
2. to arrange for a special joint meeting of CCIR Study Groups to be convened on 23 October 1978 for a duration of four weeks as a Special Preparatory Meeting (SPM) of the CCIR for the purpose of providing technical bases for the WARC-1979 and for the use of administrations in preparing their proposals;
3. to make the necessary arrangements to ensure the widest possible participation in the SPM.

In addition, it urged the administrations of Member countries to ensure adequate participation by their specialists in the Special Preparatory Meeting (SPM) of the CCIR, bearing in mind the importance of that meeting to the 1979 World Administrative Radio Conference.

(Resolution No. 804)

3.3.3.2 *World Administrative Radio Conference on the Aeronautical Mobile (R) Service*

The Council urged administrations which had not responded to IFRB Circular-letter No. 354 to do so without delay and those which have responded to confirm this information as soon as possible and preferably not later than 30 September 1977, bearing in mind the need to restrict requirements to the necessary minimum to give freedom to the Aeronautical WARC, 1978, to have some frequency space unallotted at the band edges.

It also instructed the IFRB to collate the information from those administrations that agreed that it may be made available to all, and to communicate the results together with its analysis to administrations as soon as possible in advance of the Conference.

(Resolution No. 802)

3.3.4 *Administrative Council*

3.3.4.1 *Date and duration of the 33rd session of the Administrative Council*

The Council decided to hold its 33rd session from 15 May to 2 June 1978.

(Decision No. 382)

3.3.5 *Organization of Union Headquarters*

The Council examined proposals from the Secretary-General – and also from the Chairman of the IFRB – concerning the reorganization of the Personnel Department, the Language Division and the IFRB Specialized Secretariat and consequential changes in the Computer Department. It decided to approve the proposals.

(Resolutions Nos. 789, 793 and 794)

3.3.6 *Technical Cooperation*

The Council adopted a resolution on specialized expertise for the development of telecommunications on a regional level. It instructed the Secretary-General to inform the Administrator of UNDP of that Resolution and to consult with him as to the steps which UNDP could take, within the framework of its regional programmes for the period 1977-1981, to meet the pressing requirements for specialized on-the-spot expertise for the development of telecommunications on a regional level in Africa, the Americas and Asia.

It also invited those Members of the Union which were also members of the UNDP Governing Council to have regard to the Resolution at meetings of the Council.

(Resolution No. 803)

3.3.7 *Telecommunications, an important factor in economic and social development: the role of the ITU in this domain*

The Council adopted a resolution (No. 800) on this subject, inviting all Members of the Union:

1. to provide national delegations attending meetings of the United Nations, the specialized agencies and other international organizations, where items concerning communications will be discussed, with a briefing on the role and responsibilities of the Union in the domain of telecommunications;
2. to bring this resolution to the notice of these national delegations;

and instructing the Secretary-General:

1. to bring this resolution to the notice of the Secretary-General of the United Nations and to the heads of the UN specialized agencies and of all other international organizations having an interest in the development of telecommunications;
2. to cooperate fully with the Director-General of UNESCO in the preparation of the report requested by the General Assembly in its Resolution A/RES/31/139 and to report on the progress achieved to the 33rd session of the Administrative Council;
3. to further the purposes of the Union by continuing to participate in the work of the United Nations and other international organizations in matters concerning telecommunications; in these forums, to emphasize the role and activities of the International Telecommunication Union in the domain of telecommunication development.

(Resolution No. 800)

3.3.8 *Conditions for the renting of rooms and offices in the ITU buildings*

The Council decided that henceforth the rents collected should be entered in the accounts as income of the fund for the upkeep and renewal of simultaneous interpretation equipment.

(Resolution No. 796)

3.4 *Other questions examined*

3.4.1 *Working methods of the Council*

The Council decided to set up a working group (under the chairmanship of Mr. F. Molina Negro, Spain), which would mainly work by correspondence, would meet once at ITU Headquarters with the support of the Coordination Committee and would draw up a document concerning the Council's working methods for its 33rd session (1978).

3.4.2 *Participation in the work of the CCIs*

Feeling a certain concern about the low participation in CCI meetings, the Council decided to ask the Secretary-General to send a letter to Member administrations encouraging them to participate more fully in the work of the CCIs and requesting them to explain why they thought participation was unsatisfactory. In addition, the Directors of the CCIs were requested to note all the suggestions made during the discussion on the question and, as far as possible, to apply them.

3.4.3 *ITU Centenary Monument*

The Secretary-General consulted Members concerning the use to be made of the sum of 238,056.18 Swiss francs shown in the Union's accounts as an amount deposited and reported to the Council on the subject.

In view of the variety of replies, the Council instructed the Secretary-General to provide the donor countries with complete information on the results of the first consultation and on the various suggestions made. At the same time, the Secretary-General would ask the donor countries if they were willing to authorize the Council to set up an ITU Centenary Foundation designed to award one or more prizes every year to any individual or corporate body deserving universal recognition for the value and extent of their achievements or activities for the advancement of telecommunications throughout the world.

3.4.4 *Increased use of the computer by the IFRB Notification Department*

The Council took note of the intention of the Federal Republic of Germany, the United Kingdom of Great Britain and Northern Ireland and the United States of America each to second one expert – two of them familiar with frequency notification procedures and with the use of computers and the third being a data processing specialist – to assist the IFRB in examining the possibilities of an increased use of the computer by the Notification Department.

3.4.5 *Other business*

In order not to overload this report, the other main questions examined by the Council at its 1977 session are merely listed below:

- Delayed contributions to the work of the CCITT,
- Programme of conferences and meetings, 1978 and 1979,
- Statute and reports of the Joint Inspection Unit,
- Telecommunications Documentation Centre at Union Headquarters,
- Publication of an annotated edition of the Final Acts of the Plenipotentiary Conference, Malaga-Torremolinos, 1973,

- Publications — modern forms of presentation, copyright,
- Requests submitted by international organizations for exemption from any contribution to expenses for participating in ITU conferences and meetings,
- Arrears,
- Special arrears accounts,
- Special interest on arrears accounts,
- Technical Cooperation expenditure on administrative and operational services,
- Analytical cost accounting,
- Financial requirements of the CCITT until the VIIth Plenary Assembly,
- Situation of the ITU Staff Superannuation and Benevolent Funds,
- In-service training.

**4. WORLD ADMINISTRATIVE RADIO CONFERENCE
FOR THE PLANNING OF THE BROADCASTING-SATELLITE SERVICE
IN FREQUENCY BANDS 11.7 – 12.2 GHz (IN REGIONS 2 AND 3)
AND 11.7 – 12.5 GHz (IN REGION 1)**

4.1 At its 31st Session, the Administrative Council decided, by Resolution No. 762, that the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1) should open in Geneva on 10 January 1977, with the following agenda:

1. to establish the sharing criteria for the bands 11.77 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1) between the broadcasting-satellite service and the other services to which these bands are allocated, namely:
 - the fixed service;
 - the mobile service (except the aeronautical mobile);
 - the broadcasting service;
 - the fixed-satellite service (Space-to-Earth) in Region 2;
2. to plan for the broadcasting-satellite service in the above-mentioned bands in accordance with Resolution No. 27 of the Plenipotentiary Conference (Malaga-Torremolinos, 1973) and Resolution No. Spa2 – 2 of the World Administrative Radio Conference for Space Telecommunications, Geneva, 1971;
3. to establish procedures to govern the use of these bands by the broadcasting-satellite service and by the other services mentioned in point 1 above to the extent considered necessary by the Conference;
4. matters relating to the re-arrangement of the Radio Regulations: in addition, pursuant to Recommendation Mar2 – 21 of the World Maritime Administrative Radio Conference (Geneva, 1974) to consider the results of the work of the Group of Experts on the possible re-arrangement of the Radio Regulations and make recommendations to administrations on the use of the proposed structure in the presentation of their proposals to the World Administrative Radio Conference in 1979.

4.2 One hundred and thirteen Members of the Union were represented by over 660 delegates at the Conference, which was also attended by observers from twelve international organizations.

4.3 Mr. I. Lönnberg (Denmark) was elected Chairman of the Conference. Mr. N. Bouhired (Algeria), Mr. R.E. Lee (United States), Mr. A. Fadami (Iran), Mr. Y. Maki (Japan) and Mr. A.L. Badalov (U.S.S.R.) were elected Vice-Chairmen.

4.4 The following eight committees were established:

Committee 1 – Steering

(consisting of the Chairman and Vice-Chairmen of the Conference and the Chairmen and Vice-Chairmen of the other Committees)

Committee 2 – Credentials

Chairman: Mr. A. Mbodji Dione (Republic of the Senegal)

Vice-Chairman: Mr. A.W. Gamal (Democratic Republic of the Sudan)

Committee 3 – Budget Control

Chairman: Mr. V.A.D. Rayalu (Republic of India)

Vice-Chairman: Mr. J. Székely (Hungarian People's Republic)

Committee 4 – Technical

Chairman: Mr. F. Králík (Czechoslovak Socialist Republic)

Vice-Chairman: Mr. C.A. Siocos (Canada)

Committee 5 – Planning

Chairman: Mr. A. Petti (Italy)

Vice-Chairman: Mr. M. Zubair (Islamic Republic of Pakistan)

Committee 6 – Procedures

Chairman: Mr. R.J. Bundle (New Zealand)

Vice-Chairman: Mr. M. Lô (Islamic Republic of Mauritania)

Committee 7 – Re-arrangement of the Radio Regulations

Chairman: Mr. J.J. Hernández-G. (Mexico)

Vice-Chairman: Mr. S. Oudunga (United Republic of Tanzania)

Committee 8 – Editorial

Chairman: Miss M. Huet (France)

Vice-Chairman: Mr. V. Quintas Castañs (Spain)

Vice-Chairman: Mr. D.E. Baptiste (United Kingdom of Great Britain and Northern Ireland)

4.5 The Conference ended its work on 13 February 1977 with the signature of the Final Acts of the Conference.

The Final Acts comprise:

4.5.1 *Part I. Provisions and Associated Plan*

This Part comprises sixteen articles:

Article 1. General definitions

Article 2. Frequency bands

Article 3. Execution of the Final Acts

Article 4. Procedure for modifications to the Plan

Article 5. Notification, examination and recording in the Master Register of frequency assignments to space stations in the broadcasting-satellite service in Regions 1 and 3

- Article 6. Coordination, notification and recording in the Master International Frequency Register of frequency assignments to terrestrial stations affecting broadcasting-satellite frequency assignments in the bands 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1)
- Article 7. Preliminary procedures, notification and recording in the Master International Frequency Register of frequency assignments to stations in the fixed-satellite service in the frequency band 11.7 – 12.2 GHz (in Region 2) when frequency assignments to broadcasting-satellite stations in accordance with the Plan are involved
- Article 8. Miscellaneous provisions relating to the procedures
- Article 9. Power flux density limits between 11.7 and 12.2 GHz to protect terrestrial services in Regions 1 and 3 from interference from Region 2 broadcasting-satellite space stations
- Article 10. Power flux density limits between 11.7 and 12.2 GHz to protect space services in Region 2 from interference from broadcasting-satellite space stations of Regions 1 and 3
- Article 11. The Plan for the broadcasting-satellite service in the frequency bands 11.7 – 12.2 GHz in Region 3 and 11.7 – 12.5 GHz in Region 1
- Article 12. Provisions governing the broadcasting-satellite service in Region 2 pending the establishment of a detailed Plan
- Article 13. Approval of the Final Acts
- Article 14. Interference
- Article 15. Entry into force of the Final Acts
- Article 16. Period of validity of the provisions and associated Plan

4.5.2 *Part II.* Re-arrangement of the Radio Regulations and the Additional Radio Regulations

4.5.3 *eleven annexes:*

- Annex 1. Limits for determining whether a service of an administration is considered to be affected by a proposed modification to the Plan
- Annex 2. Basic characteristics to be furnished in notices relating to space stations in the broadcasting-satellite service
- Annex 3. Method for determining the limiting interfering power flux density at the edge of a broadcasting-satellite service area in the band 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1) and for predicting the power flux density produced there by a terrestrial station
- Annex 4. Need for coordination of a fixed-satellite space station or a broadcasting-satellite space station in Region 2 with respect to the Plan
- Annex 5. Power flux density limits between 11.7 and 12.2 GHz to protect the terrestrial services in Regions 1 and 3 from interference from Region 2 broadcasting-satellite space stations
- Annex 6. Planning principles in Region 2
- Annex 7. Use of the spectrum/orbit resource
- Annex 8. Technical data used in establishing the provisions and associated Plan and which should be used for their application
- Annex 9. Criteria for sharing between services
- Annex 10. Orbital position limitations
- Annex 11. Method of calculating the power flux density produced in the territories of Region 2 by space stations in the broadcasting-satellite service in Regions 1 and 3

4.5.4 the *Final Protocol* which was signed by one hundred and eleven delegations

4.5.5 ten *Resolutions* on the following subjects:

No. Sat – 1. Preparation and publication of information not contained in the broadcasting-satellite Plan for Regions 1 and 3

No. Sat – 2. Updating of the Master International Frequency Register for Regions 1 and 3 on the date of entry into force of the Final Acts

No. Sat – 3. Period between the entry into force of the Final Acts of the Conference and the date on which the provisions and associated Plan are annexed to the Radio Regulations

No. Sat – 4. Annexing to the Radio Regulations of the provisions and associated Plan contained in the Final Acts of the Conference

No. Sat – 5. Coordination, notification and recording in the Master International Frequency Register of frequency assignments to stations in the broadcasting-satellite service in Region 2

No. Sat – 6. Coordination, notification and recording in the Master International Frequency Register of assignments to stations in the fixed-satellite service with respect to stations in the broadcasting-satellite service in Region 2

No. Sat – 7. Use, by space stations operating in the frequency bands 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1), of the geostationary orbit and no other

No. Sat – 8. Preparation for an administrative radio conference for the detailed planning of the space services in the frequency band 11.7 – 12.2 GHz in Region 2

No. Sat – 9. Submission of requirements for the broadcasting-satellite service in Region 2

No. Sat – 10. Possible Re-arrangement of the Radio Regulations and the Additional Radio Regulations

4.5.6 eight *Recommendations* on the following subjects:

No. Sat – 1. Up-links for the broadcasting-satellite service

No. Sat – 2. Radiation of harmonics of the fundamental frequency by broadcasting-satellite stations

No. Sat – 3 to the CCIR. Studies of propagation at 12 GHz for the broadcasting-satellite service

No. Sat – 4 to the CCIR. Transmitting antennae for the broadcasting-satellite service

No. Sat – 5 to the CCIR. Up-links for the broadcasting-satellite service

No. Sat – 6 to the CCIR. Spurious emissions in the broadcasting-satellite service

No. Sat – 7 to the CCIR. Interdependence of receiver design, channel grouping and sharing criteria

No. Sat – 8. Convening of a regional administrative radio conference for the detailed planning of the space services in the frequency band 11.7 – 12.2 GHz in Region 2.

4.6 The Conference established, *inter alia*, a Plan (Article 11) for the broadcasting-satellite service in Regions 1 and 3 (the whole world except the Americas). Provisions were adopted governing the broadcasting-satellite service in Region 2 (the Americas), pending the establishment of a detailed plan (Article 12). The Region 2 plan will be established by a regional administrative radio conference which should be held in 1982 at the latest (Recommendation No. Sat – 8).

4.7 The Final Acts will enter into force on 1 January 1979.

The provisions and associated Plan have been prepared in order to meet the requirements of the broadcasting-satellite service in the bands concerned for a period of at least fifteen years from the date of the entry into force of these Final Acts.

In any event, the provisions and associated Plan shall remain in force until their revision by a competent administrative radio conference convened in accordance with the relevant provisions of the Convention in force.

4.8 The 1979 World Administrative Radio Conference is requested (Resolution No. Sat - 4) to annex the provisions and associated Plan to the Radio Regulations as an integral part thereof, in the form and to the extent it deems most appropriate without thereby affecting their content or integrity.

5. ACTIVITIES OF PERMANENT ORGANS

5.1 Activities of the General Secretariat

The General Secretariat comprises six departments: Personnel; Finance; Conferences and Common Services; Computer; External Relations; Technical Cooperation.

5.1.1 *Personnel Department*

In 1977, the enquiry of a specialist on post classification continued and the Administrative Council approved the classification plan recommended, which creates a situation comparable with that of the other organizations for the Union's established staff. The consequences for staff members of the decisions on posts were examined in detail and the necessary action was taken, involving a heavy workload. Requests for review were followed up.

As regards inter-agency bodies, the volume of activities continues to increase; this applies to meetings of the CCAQ, of the International Civil Service Commission and of the contributions required by the Joint Inspection Unit. The most important question which required the most prolonged attention was the remuneration of the General Service category. The Personnel Department played a particularly active role in this study.

5.1.2 *Finance Department*

The Finance Department continued to deal with the accounts of the Union and of Technical Cooperation, the preparation of the budgets, the control and supervision of the available credits, the payment of salaries and allowances to staff members and experts, as well as with the sale of the publications issued by the ITU.

In addition to its regular duties, the Finance Department had to undertake an exceptional volume of work in 1977 owing to the retroactive reclassification of a large number of posts. In addition, the credit restrictions introduced in the three budgets of the Union gave rise to a number of management problems which necessitated the strengthening of control over credits and expenditure.

1977 was also exceptional from the point of view of sales owing to the publication in that year of all the sixteen Volumes constituting the CCITT Orange Book.

5.1.3 *Department of Conferences and Common Services*

The Department furnished services to the 12 GHz Satellite Broadcasting Conference, the 32nd Session of the Administrative Council, 215 days of CCITT meetings, the first series of the CCIR Final Study Group meetings and to seminars and training courses of the Technical Cooperation Department, as well as carrying out routine activities and preparatory work for the second series of CCIR meetings and for the Aeronautical Conference.

In 1977, Resolution No. 794 was implemented and the post of Head of the French translation section was created and filled. The posts of four translators were converted into translator/reviser posts which helped speed up the work of revision.

The post reclassification survey produced an extra workload for the common services, particularly as far as the Language Division was concerned. In general, the timing of the two series of CCIR meetings with a four-month interval between them meant that the common services had to service the first series and at the same time complete the preparatory documents for the second series, which called for a concentrated effort by all services.

The Department was able to reduce paid overtime to a strict minimum by adjusting the timetables of shift work and compensating with time off at less busy periods. No office space was rented outside the ITU. Conference rooms were only rented when the number of participants anticipated exceeded the seating capacity of ITU accommodation. In response to various requests from the Joint Inspection Unit, information was supplied for a survey of the use of premises in international organizations.

5.1.3.1 The *Language Division* translated 16,683 pages into French (38.5% of the total), 6,555 pages into English (15.1% of the total) and 20,149 pages into Spanish (46.4% of the total), which represented 43,317 pages, an increase of 5,757 pages over 1976 (+15.3%). The main areas of activity were for the CCIR (26%), the CCITT (24.5%) and the Technical Cooperation Department (16.5%).

5.1.3.2 During the year 1977, the *Typing and Text Composition Division* was created by an amalgamation of all services dealing with the composition of text for documents and publications; the result was entirely positive. The judicious use of a versatile staff ensured high productivity in all sectors. The Typing Pool produced 31,300 pages in French (39% of the total), 18,990 pages in English (24% of the total) and 29,671 pages in Spanish (37% of the total), which represented in all 79,961 pages, a decrease of 1,092 pages compared with 1976 (-1%). In addition, many tapes were transcribed for the Spanish translation section. Magnetic cards were also used in the Pool for repetitive texts, reducing the risk of error and saving much typing time. Complex texts which were required for certain ITU publications were composed (without memory), achieving a professional typographical standard at less cost than outside printers would have charged. The same was true of the texts composed with a memory support. The Text Composition Service, in collaboration with specialists in the Computer Department, accomplished a great deal in the field of research and the application of new methods of composition and storage for re-use and updating. In 1977, the new text composition system, which had been installed at the end of 1976, was used to produce some very large publications. For the first time, the conclusions of a CCI Plenary Assembly (CCITT) were published in the three working languages within twelve months after the end of the Plenary Assembly. During the year, 18,904 pages were composed and 11,904 were recoded, including 10,113 pages for the CCITT Orange Book (3,371 pages per language). Prior to 1976, the majority of ITU publications were composed by outside printers, but with the progress made in 1977, only composition which could not be handled by in-house services for technical reasons was placed with outside printers. The amount of text stored for re-use increased enormously and should lead to a certain stabilization in composition costs. Publications requiring periodic updating were treated by the system which provided for the re-use of text without complete proof-reading and the supply of extracts, in different formats, as necessary. An average of 38 persons were employed in the service.

5.1.3.3 The *Publications and Reprography Division* arranged the printing of 440 publications (representing 43,000 pages in 763,270 copies). In 1977, of the many calls for bids sent to printers for the offset printing and binding of ITU publications, some were made at the international level, in accordance with Decision

No. 153 of the Administrative Council, but they were between 30% and 40% higher than local offers. Through better management practices, including the general use of ISO standard sizes, the introduction of a standard range of paper and the increased use of the print area on each page, publication costs were reduced, despite the continual rise in the cost of items making up the total. Altogether 40,988,477 A4 format pages of conference documents were reproduced by offset printing, 40,613,832 of them in ITU workshops. Outside sources, including other international organizations in Geneva, were used to print 374,645 pages, a considerable decrease from the 5,684,208 pages printed outside in 1976.

During the year, offers were invited from a wider range of printing sources with a view to assuring competitive costs. With the evolution of presentation of final manuscript in film formats and as the amount of conventional type setting is reduced, this practice will be expanded.

5.1.3.4 In 1977, the *Dispatch/Transport Section* dispatched, direct from various printers, 180,900 kg of publications (to the value of 6,060,600.— Swiss francs) at a cost of 202,200.— Swiss francs; from the ITU, miscellaneous printed matter was dispatched at a cost of 917,700.— Swiss francs and conference documents at a cost of 488,900.— Swiss francs. At the request of the 32nd session of the Administrative Council, a study of the number of registered items was made and it was found possible to make some reduction. A comparison showed that, in 1977, there were 49,600 registered items for which a surtax of 36,000.— Swiss francs was paid, whereas in 1976 there had been 67,500 with a surtax of 49,000.— Swiss francs.

5.1.3.5 The *Conference Documents Service* handled a total of 4,471,932 documents, of which 1,939,004 were dispatched, 1,805,392 were distributed at the ITU and the remainder were kept in stock.

5.1.3.6 In the *Buildings and Supplies Division*, the Building Section, in addition to its normal maintenance and servicing activities, undertook extensive repairs to the floor base in the Reprography Service and completely renewed the drainage system. The section also rearranged office partitioning in order to make the best use of available space.

The Technical Service made numerous improvements to the electrical installations in the Varembe building and also assisted in setting in order the reprography workshops. It scheduled and supervised the work of converting the interpretation installations so as to make the Chinese booths compatible with those for other languages. It also regularly checked the fire detection system.

The Heating and Air-conditioning Service took steps to change the air-conditioning system in the computer room following the increase in the number of machines placed there and continued to study other air-conditioning problems in the Varembe building. It arranged for the installation of a new air-conditioning system to improve conditions in the interpreters' booths in Room B.

The Supplies Section continued its efforts to obtain the best purchasing conditions for furniture and machines as well as the much wider range of office supplies and papers. In all, 1,100 orders were placed with various suppliers. In addition to the usual office supplies, the distribution of which to the different services is subject to strict control in the interests of economy, approximately 26 million sheets of offset paper of various dimensions and qualities (making about 31,600,000 A4 sheets) were supplied to the Reprography Service.

5.1.4 *Computer Department*

In 1977, the Union continued to use computers as an integrated management tool in its technical and regulatory work and for its technical conferences. The Computer Department provided the various organs and departments of the Union with the data processing services, including 2,709 computer hours, needed to perform their technical and administrative tasks, especially those intended to facilitate international coordination in planning and operation of telecommunication services of Member Governments and Administrations.

The regular product of the computer increased steadily in various fields of activity.

Feasibility studies and systems analyses were carried out on various subjects, and some of the existing applications were amended to meet new needs of users.

The new text treatment system played a key role in the production of the CCITT Orange Book, Re-arrangement of the Radio Regulations, Telex and Telegraph Instructions, Final Acts of the WARC for the planning of the Broadcasting Satellite Service, modification to the Manual for the Maritime Mobile Service. New developments are in progress in this field, which will further improve the computer techniques applied in ITU publication work and will also be used for the creation of an ITU terminology data base.

The Department gave the necessary assistance to the Broadcasting-Satellite Conference in the intensive use of computer facilities. The computer centre was also used extensively for the re-examination of provisional notices, as laid down by the 1974 Maritime Conference. Requests from several administrations regarding the LF/MF Broadcasting Conference were also met by sending the necessary data and programmes on magnetic tape. Furthermore, the Department provided the necessary software support in the preparation for the Aeronautical Conference.

In order to optimize the potential use of the computer centre, the comprehensive training programme of the Department's technical staff was continued in order to keep them abreast of the advanced methods, techniques and skills currently available to meet the critical time and cost constraints of the present situation.

Furthermore, the Department organized numerous courses and information sessions to keep the staff of the Union concerned with computer use informed of new developments and the most recent procedures applied in the ITU computer centre.

Details of the Department's activities will be found in Annex 4 to this Report.

5.1.5 *Department of External Relations*

The Department of External Relations comprises four divisions: Relations with the United Nations and other international organizations, Relations with Members of the Union, Public Relations and the Division dealing with the preparation of Administrative Council sessions, with conferences and with legal business.

5.1.5.1 In 1977, the staff of the Department continued to keep in close touch with the work of the United Nations on matters of common interest and coordination among the specialized agencies. Special attention was devoted to the discussions held in the United Nations and in other organizations on subjects relating to the peaceful uses of outer space, particularly the work of the Scientific Technical Sub-Committee and more specifically the Legal Sub-Committee of the Committee on Outer Space, where discussions sometimes dealt with certain aspects of the Union's legislative texts having a bearing on the work of the latter Sub-Committee.

Legal business included the preparation, scrutiny and drafting in proper form of various types of contracts and service agreements and the preparation of draft agreements. In addition, assistance was provided for ITU conferences and meetings, the Administrative Council and the World Administrative Broadcasting-Satellite Conference.

The Department also continued activities aimed at strengthening cooperation and collaboration with certain regional organizations such as the Arab Fund for Economic and Social Development and the Arab Bank for Economic Development in Africa.

5.1.5.2 The *AC and Conferences Division* provided the executive secretariat for the World Administrative Broadcasting-Satellite Conference (Geneva, January 1977) and the secretariat for the Credentials Committee of the Conference.

It also dealt with the administrative arrangements for the 32nd session of the Administrative Council, for which it provided the executive secretariat.

These arrangements comprised particularly invitations and the compilation of preparatory documents.

The Division also coordinated the processing of preparatory documents for the World Administrative Radio Conference on the Aeronautical Mobile (R) Service and coordinated the dispatch of documents to participating Administrations.

With regard to publications, the AC and Conferences Division prepared and coordinated the establishment of the manuscript of the Final Acts of the World Administrative Broadcasting-Satellite Conference (Geneva, 1977) and checked the proofs. It also took charge of the issue of the annual Report on the Activities of the Union and of Supplement No. 12 to the Volume of Administrative Council Resolutions and Decisions.

5.1.5.3 In 1977, the activities of the *Public Relations Division* centred on the preparation of World Telecommunication Day (17 May 1977), on the implementation of Resolution No. 47 of the Malaga-Torremolinos Plenipotentiary Conference concerning the creation of a documentation centre, on the preparations for TELECOM 79, the 3rd of the World Telecommunication Exhibitions, on the publicity campaign for the World Administrative Aeronautical Radio Conference and on the preparation of the fiftieth anniversary of the CCIR.

The theme proposed by the Administrative Council for the *World Day* in 1977 was "Telecommunication and Development". The preparations for this day were made in close collaboration with UNDP, which had agreed to associate itself with the ITU. In 1975, it was WMO which was associated with the World Day and in 1976 it was UNESCO.

The Working Party on the *Documentation Centre*, comprising representatives from eight ITU Member countries, held its 5th meeting. Concrete measures were adopted to move on to the practical stage of the study.

In 1977, official invitations were sent out for TELECOM 79. Even before these invitations were received, many exhibitors had reserved space or announced their intention to participate. At the end of 1977, nearly 90% of the total available space in the Palais des Expositions in Geneva (53,000 m²) had been rented. TELECOM 79, which will be held in Geneva from 20 to 23 September 1979 will certainly be the largest world telecommunication exhibition ever organized. A "World Electronic and Telecommunication Book Fair", the IIIrd World Festival of Telecommunication and Electronics Films and the 3rd of the World Telecommunication Forums, for engineers, meeting under the auspices of the Union and a large number of professional associations, will be held during TELECOM 79. The 3rd competition "Youth in the Electronic Age" will also be organized in connection with the exhibition.

The Telecommunication Journal published a special issue on telecommunications in Canada. All of the 10,000 copies printed were sold. Also, in connection with the World Administrative Broadcasting-Satellite Conference, the Journal published a list of all satellites launched from 1957 to 1976 inclusive. On the occasion of this Conference, information on the work and responsibilities of the ITU in space matters was widely disseminated.

Traditional public relations activities were continued: talks on the ITU were given to 30 groups totalling some 800 people and 28 press releases were issued. A number of interviews and programmes for broadcasting stations of Member countries were produced in the recording studio. The central library loaned 9,100 books in 1977 and was visited by 4,010 readers. The film library answered 215 requests for the loan of films which were projected 380 times to 23,767 viewers and 320,000 television viewers. A new film library catalogue was published.

5.1.5.4 The work of the *Division on Relations with Members of the Union* is divided into three Services dealing with:

- application of the Convention/Protocol and of the Telephone Regulations and statistics;
- application of the Telegraph Regulations;
- application of the Radio Regulations.

The function of the Division is to handle the relations that the Members of the Union maintain with one another through the medium of the General Secretariat. The Services of the Division are placed under a common direction in the interests of efficiency and standardization. The fact that certain of the data received from administrations may concern more than one service, calls for close liaison between the various parts of the Division. The salient features of the Division's work during 1977 are reported separately in respect of each service.

5.1.5.4.1 *Service for the application of the Convention/Protocol and of the Telephone Regulations and for statistics*

In 1977, this service acted as a depositary of the Acts of the Union and dealt with questions relating to requests for (or termination of) participation in the work of the International Consultative Committees. As in 1976, a special effort was made to draw the attention of Member countries which had not yet ratified (or acceded to) the Convention to the need to comply with that formality in order to recover their right to vote.

The service also prepared the following documents for publication:

Notification (12 issues), Operational Bulletin (14 issues), List of Addresses (Supplement No. 12 to the 4th and 5th editions), Yearbook of Common Carrier Telecommunication statistics (4th edition), List of International Telephone Routes (17th edition), List of Cables Forming the World Submarine Network (19th edition).

It was decided to publish the Operational Bulletin fortnightly instead of monthly in order to make information received by the General Secretariat more rapidly available to Administrations. This measure was put into effect in November 1977.

Lastly, the Head of this Service provided the Secretariat for the Editorial Committee of the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in the Frequency Bands 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1).

5.1.5.4.2 *Service responsible for the application of the Telegraph Regulations*

In 1977, this service had to apply those decisions of the CCITT VIth Plenary Assembly, which had a bearing on its work. Thus, at the request of administrations, two new sets of instructions were published as A5 format handbooks (based on texts already set up for the CCITT Orange Book by the new text treatment system). These were:

- Instructions for the Operation of the International Public Telegram Service (1977 edition) which supersedes the 1974 edition, and
- Instructions for the Operation of the International Telex Service (1977 edition),

for the publication of which the CCITT VIth Plenary Assembly had requested the General Secretariat to consult administrations.

Following the adoption by the CCITT VIth Plenary Assembly of proposals for the simplification of the international public telegram service (which were to become effective on 1 October 1977), the position adopted by each administration or RPOA regarding the optional provisions and certain other points of detail concerning that service had to be re-examined. To facilitate the exchange of information among administrations/RPOAs on the manner in which they intended, with effect from 1 October 1977, to apply the provisions which were to govern the international public telegram service, the necessary arrangements were made for the collection and early circulation of the information required.

The use of magnetic card typewriters with memory, referred to in last year's report, was further expanded to prepare two new publications, bringing the number of service documents prepared by this new technique to six.

The following is a list of the documents prepared by this service in 1977 for publication:

Supplement No. 1 to the 24th edition (1976) of the List of Telegraph Offices, Supplement No. 4 to the 1st edition (1975) of the Table of Telegraph Rates, Supplements Nos. 6 and 7 to the 3rd edition (1973) of the List of Indicators for the Telegram Retransmission System and Telex Network Identification Codes, Supplement No. 2 to the 1st edition (1976) of the General Information Relating to the Operation of the International Telegraph Service, Supplements Nos. 2 and 3 to the 5th edition (1976) of the Gentex Table Routing Table for Offices connected to the Gentex Service,

5th edition (1977) of the TA Table, 1st edition of the List of Telecommunication Channels used for the Transmission of Telegrams, Table of International Telex Relations and Traffic (1976), Instructions for the Operation of the International Public Telegram Service (in three languages), Instructions for the Operation of the International Telex Service (in three languages).

5.1.5.4.3 *Service for the application of the Radio Regulations*

In 1977, this Service continued to effect the coordination between Members of the Union on questions relating to the application and interpretation of radio regulatory and operational matters necessitating a reciprocal exchange of information. It also continued to perform tasks concerning radiocommunication operational matters, tariff information, as well as the implementation of certain decisions of Administrative Conferences of the Union and Plenary Assemblies of the CCIs.

The main tasks performed by the service are summarized in the following breakdown:

a) Radio Regulations

In accordance with Nos. 749 and 749A of the Radio Regulations, several series of call signs, blocks of selective call numbers for ship stations and blocks of coast station identification numbers were allocated provisionally to countries. As required by No. 751 of the Radio Regulations, numerous cases were treated with respect to errors in the assignation of call signs to stations and the malformation of such call signs. For the coordination between Lists I and IV, as provided for in No. 815 of the Radio Regulations, relevant coordinated extracts of these Lists were prepared and sent to seven administrations.

b) European Broadcasting Convention (Copenhagen, 1948)

Proposals concerning amendments to the Copenhagen Plan were handled.

c) World Administrative Radio Conference, 1974

Introduction of new calling procedures for HF A1 Morse telegraphy in the Maritime Mobile Service (Resolution Mar2 – 5 and Appendix 15C Mar2, Radio Regulations). There was an extensive exchange of correspondence with administrations, which resulted in the publication in the Operational Bulletin of particulars concerning the implementation of the new procedures by 57 countries.

Due to the entry into force of the new radiotelephone frequencies and classes of emission in the bands allocated to the Maritime Mobile Service between 4000 and 23 000 kHz (Resolutions Mar2 – 12, Mar2 – 13 and Appendix 17 Rev. Mar2) on 1 January 1978, an extensive exchange of correspondence was necessary with the administrations concerned. This included the preparation and dispatch of extracts from the Coast Station Frequency File to 118 administrations. The information gathered was the subject of a special supplement to the 6th edition of the List of Coast Stations (List IV), issued on 15 December 1977.

Consequent to the replacement of Appendix 25 MOD by Appendix 25 Mar2 (Resolution Mar2 – 12) a set of loose-leaf pages for the updating of the Radio Regulations was issued in separate versions in French, English and Spanish (96 pages per version), the total number of copies being 7,750.

d) World Broadcasting Satellite Administrative Radio Conference, 1977

Issuance of the “Re-arrangement of the Radio Regulations” and its Addendum (Resolution Sat-10). Separate versions in French, English and Spanish were printed (555 pages per version), the total number of copies being 2,821.

e) CCITT VIth Plenary Assembly

Consequent to the revision of the operational provisions for the International Public Telegram, Telex and Telephone Services, adopted in the VIth Plenary Assembly of the CCITT, Geneva 1976, a set of loose-leaf replacement pages for the updating of the “Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services” was issued. Separate versions in English, French and Spanish were printed (220 pages per version), the total number of copies being 28,120.

f) Compilation, coordination and dissemination of operational data

During the course of 1977, this Service continued to examine and process notifications from administrations concerning operational and related matters for the updating of the following operational registers:

- Coast Stations;
- Ship Stations;
- Call Signs;
- Radiodetermination and Special Service Stations;
- Monitoring Stations.

The examination and verification of notifications in order to ensure their accuracy and consistency with official texts, the detection of possible errors, misinterpretations and/or ambiguities, as well as the coordination between files resulted in the exchange of a considerable amount of correspondence with administrations.

The volume and complexity of the work involved in the maintenance of the Register of Coast Stations has been greatly affected by the entry into force of decisions of the WARC 1974 concerning radiotelegraph and radiotelephone HF operational procedures and frequency changes. The increase in the number of ship stations in the Ship Station Register was accentuated in 1977, resulting in a net increase of 8,956 ship stations.

The Service, in 1977, was responsible for the publication of the following service documents:

List of Coast Stations (List IV) (trilingual: F, E, S) with Supplements Nos. 1 and 2 (6th edition) and Special Supplement (6th edition), List of Ship Stations (List V) (trilingual: F, E, S) 17th edition and Supplements Nos. 1 and 2, List of Radiodetermination and Special Service Stations (List VI) (trilingual: F, E, S), Volume I: Supplements Nos. 1 and 2 (6th edition) Volume II: 6th edition Supplement No. 1 (6th edition), Alphabetical List of Call Signs of Stations List VII A (multilingual: F, E, S, R, C) 8th edition Supplement No. 1, List VII B (trilingual: F, E, S) 7th edition Supplement No. 1.

The full publishing process of the above-mentioned service documents involves tasks ranging from the compilation of the data up to and including the final "go-ahead" (good for distribution) authorization.

g) Participation in Conferences and Meetings dealing with operational radiocommunication matters

The staff of the service participated in certain conferences and meetings of the CCIR, CCITT and CITELE, as well as in seminars dealing with matters related to the scope of duties of the service.

h) Other activities

The service handled all matters related to operational charges and accounting authorities in the Maritime Mobile Service and kept up-to-date the Optional Provisions (2nd Series) (Radio Regulations).

In order to carry out the tasks assigned to this Service, a great deal of planning and scheduling was necessary in 1977. This involved a comprehensive amount of coordination with other Departments and the printers.

Assistance was rendered to administrations, RPOAs, technical enterprises and individuals by replying to numerous requests for information relating to the application and/or interpretation of legal or quasi-legal international texts concerning radiocommunications in general, and operational matters in particular. In some cases, a fair amount of research work was required.

i) Working methods and the use of data-processing techniques

As a result of the revision of working methods with respect to the handling of the Ship Station file, the 17th edition of the List (February 1977) was prepared and issued using a new computerized system for the storage, updating, processing and printing of data.

The preparation and page composition of Part C of the replacement pages for the updating of the Maritime Manual was done using the information stored for Volume II of the CCITT "Orange Book".

Computerized text treatment was used for the "Re-arrangement of the Radio Regulations". The texts of Articles 1 to 45 (Articles N1 to N73 of the Re-arranged Radio Regulations), with the exception of the tables of frequency allocations (Article 5), are now computer-stored for future use. This will greatly facilitate the reproduction of the Final Acts for the WARC, 1979.

5.1.5.4.4 *General aspects concerning more economic treatment and presentation of information and data*

As outlined in various sections of this Annual Report substantial progress was made with the more economic treatment and presentation of information and data in documents and publications of the Union. Special steps were also taken to assist the wider dissemination of the published data and to increase the publication sales. They included:

- contacts with some distributing agencies and well-known publishers of telecommunication and computer journals with which arrangements were made for either publicity (no cost) and/or sales distribution on a commission basis,
- as supplements to the sale of publications, some distribution in specialized cases of material in magnetic tape or microfilm form for internal use by administrations,
- as a result of collaboration with the Director, CCITT, and contacts with the Chairmen of Study Groups concerned with data transmission, agreement was given to certain texts or extracts to be reproduced by certain national institutions along with related national standards. In some cases reference to reproduction of some ITU texts were arranged by national standards' bodies without profit with an acknowledgement of the Union's work and responsibility. In instances of reproduction for profit, and taking account of the structure of the Publications Account, approval was given on the basis of purchase of some of the volumes concerned with a nominal payment on a similar basis as adopted by related institutions such as the IEC, ISO.

5.1.6 *Technical Cooperation Department*

The activities of this Department are discussed in Section 6 of the Report.

5.2 **Activities of the International Frequency Registration Board (IFRB) *)**

5.2.1 *Treatment of frequency assignment notices*

The Board continued to carry out its duties as prescribed in the International Telecommunication Convention and the Radio Regulations annexed thereto. These duties in relation to the co-ordination, notification, technical examination and registration of frequency assignments involved steps to ensure the application both by the administrations and the IFRB of the provisions of the Radio Regulations. During the year 1977, the Board dealt with a total number of 79,033 frequency assignment notices.

*) See also circular-letter No. 241 of 29 May 1978.

5.2.2 *Technical examination of frequency assignment notices*

The Board effected a full technical examination, in accordance with the provisions of the Radio Regulations, of the following frequency assignments, with a view to their recording in the Master International Frequency Register:

- 14,326 assignments notified under Article 9 of the Radio Regulations (14,053 in 1976);
- 4,477 assignments notified under Article 9A (2,940 in 1976);
- 26,454 assignments notified under Article 10 (for bringing up to date the Master Register under Article 9 at a later date) (27,079 in 1976).

5.2.3 *High-frequency bands allocated exclusively to the Broadcasting Service*

The Board continued to apply the procedure specified in Article 10 of the Radio Regulations for the HF bands allocated exclusively to the Broadcasting Service. In conformity with its terms of reference, it published the four Tentative High Frequency Broadcasting Schedules together with recommendations with a view to improving the utilization of the spectrum. The volume of these Schedules varied from season to season and the number of frequency-hours included in each HF Broadcasting Schedule has increased from approximately 16,700 in November 1960 to approximately 22,000 in November 1977. Despite the increasing use of the frequency bands, the number of apparent incompatibilities remains limited owing, in particular, to preliminary co-ordination measures taken by some administrations.

5.2.4 *Bringing up-to-date the Frequency Allotment Plan for HF Coast Radiotelephone Stations contained in Appendix 25 Mar2 (Article 9B for the Radio Regulations)*

The Board developed provisional internal procedures to be followed in the application of the provisions of Article 9B for bringing up-to-date the Frequency Allotment Plan contained in Appendix 25 Mar2. It also defined the technical standards to be applied in the examination of incompatibilities to be indicated in the Special Section published by the IFRB under No. 639DZ and in the case where the Board is requested by an administration under paragraph b) of No. 639EA to indicate a suitable channel for the service projected by the administration before submission of the information for publication.

5.2.5 *Interference cases and special assistance to Administrations*

The Board formulated suggestions on a number of specific cases for the use of frequencies by administrations and made recommendations with a view to the clearance of harmful interference or to rendering special assistance upon request by administrations. This is an aspect of the Board's work on which administrations place particular importance and has become a field in which the Board's assistance is solicited increasingly. In addition to these specific cases in which the Board intervened, frequently a member of the Board met with representatives of administrations and discussed the procedures for notifying frequency assignments and the choice of frequencies to be assigned.

5.2.6 *Monitoring*

Four periodic Summaries of Monitoring Information, numbered 192 (for the period November 1976 to January 1977) to No. 195 (for the period July to October 1977) inclusive and totalling 877 pages were issued in 1977. Each Summary contained results of monitoring observations in the frequency bands between 2,850 kHz and 28,000 kHz, including information concerning broadcasting stations; each one covered a period of three months and included all information received by the Board concerning the last month of the

Summary immediately preceding the Summary under preparation. (For further detailed explanations in this connection reference may be made to IFRB Circular-letters No. 241, dated 25 May 1970, and No. 248, dated 23 November 1970.)

A special programme was conducted in 1977 for monitoring the frequency bands allocated exclusively to the Aeronautical Mobile (R) Service between 2850 and 17,970 kHz, from 12 to 25 September 1977 (IFRB Circular-letter No. 387 of 29 July 1977).

5.2.7 Review of entries in the Master International Frequency Register of frequency assignments for international circuits in the Fixed Service in the high frequency bands (3-30 MHz) with a view to ascertaining the use actually made of them

In 1977, in accordance with Nos. 476 and 477 of the Radio Regulations, the Board continued to apply a procedure it had set up in 1974 to determine which frequency assignments to international links in the Fixed Service recorded in the Master Register no longer reflected actual usage of the radio spectrum in the 3 to 30 MHz range, with a view to making the necessary changes or cancellations under Nos. 620 and 622 of the Radio Regulations.

The Board considered, that the use of other high-capacity telecommunication media such as satellite networks, submarine cables, etc. meant that there was less need for frequencies in the HF bands (3-30 MHz) for handling traffic on international links. The Board therefore decided to apply the above-mentioned investigation procedure and to examine the frequency assignments to Fixed Service stations recorded in the Master Register on behalf of countries which, according to the information available to the Board, were also using other telecommunication media.

In 1977, the Board examined the frequency assignments to Fixed Service stations open to public correspondence which are recorded in the Master Register on behalf of a number of countries, using the procedure described above. The results were sent to these administrations in the form of annotated extracts from the Master Register. The extracts included the Board's remarks on the existence in respect of certain circuits of telecommunication media other than those operating on high frequencies and the administrations were invited to delete or change as necessary the pertinent entries.

In 1977, the Board received replies to this investigation from nineteen administrations.

Thanks to the co-operation of administrations, the results of the enquiry are that of a total number of entries in the Master Register of 7,896 (100%) subject to this enquiry:

- 5,613 entries (or 71.08%) *have been cancelled*
- 1,481 entries (or 18.76%) have been modified to indicate that the assignment is used occasionally
- 802 entries (or 10.16%) have been maintained unchanged.

5.2.8 Review of entries in the Master International Frequency Register of frequency assignments to space radiocommunication stations (No. 639DO of the Radio Regulations)

In accordance with No. 639DO of the Radio Regulations, the IFRB consulted all administrations on whose behalf space radiocommunication stations are entered in the Master International Frequency Register, with a view to revising the frequency assignment entries. In 1977, the Board had received 125 replies, on the basis of which it set about updating the Master Register.

5.2.9 Implementation of the decisions of the World Administrative Maritime Radio Conferences, Geneva, 1967 and 1974

a) Although the Final Acts of the World Administrative Maritime Radio Conference, Geneva, 1967 entered into force on 1 April 1969, the Conference foresaw that some of the provisions it adopted could be applied only in successive stages. It accordingly drew up a schedule, some stages of which extend until 1983. These decisions were confirmed and supplemented, where appropriate, by the World Administrative

Maritime Radio Conference, Geneva, 1974, which adopted, in its Resolution No. Mar2 – 2, a calendar for the implementation of its decisions regarding the rearrangement of the frequency bands allocated exclusively to the Maritime Mobile Service between 4 and 27.5 MHz. The decisions of this Conference were summarized by the Board in IFRB Circular-letter No. 320 of 20 March 1975.

b) The last step of the calendar in Resolution No. Mar2 – 2 was to take place on *1 January 1978* and it entailed several important actions to be taken by administrations with a view to the implementation of the related decisions. One major issue was the complete cessation by that date of double sideband and independent sideband operation in the HF bands reserved for maritime radiotelephony. The new channels based on the exclusive use of single sideband equipment and defined in Appendix 17 Rev. were to be used as from that date and the assignment of the new frequencies used for duplex operations was to be made in accordance with the new Frequency Allotment Plan for Coast Radiotelephone Stations contained in Appendix 25 Mar2, which was entering into force at that date. In its Resolution No. Mar2 – 12, the Maritime Conference had specified that on 1 January 1978 at 0001 GMT coast and ship stations had to change their transmitting and receiving frequencies (duplex operation) to bring them into conformity with Section A of Appendix 17 Rev. It was also provided that frequencies used for simplex operation by coast and ship stations (or crossband operation for intership communications) should be modified between 16 July 1977 and 1 January 1978 so as to conform with Section B of Appendix 17 Rev. Other technical provisions related to the introduction of the single sideband techniques were also to be introduced at the same date.

c) In order to induce administrations to apply these decisions as fully as possible and to assist them in so doing, the Board issued on 23 June 1977, IFRB Circular-letter No. 382 in which it summed up the pertinent decisions and gave all relevant details concerning their implementation and the manner in which the resultant changes had to be notified to the IFRB. It also sent to all administrations concerned an extract from the Master Register showing all entries concerning coast transmitting and receiving frequencies which were affected by the above decisions.

d) In the Addendum to IFRB Circular-letter No. 366 of 12 November 1976 the Board drew the attention of administrations to certain anomalies which it detected in the results of the examination of the provisional notices in the 4 MHz band which it carried out in application of Resolution No. Mar2 – 11. In view of these anomalies, the Board recommended to the administrations concerned to re-examine their provisional notices in the 4 MHz band and restrict to the minimum possible the range and hours in the proposed area of service.

e) As a result of the request of the Board, several administrations communicated modifications to their provisional notices in the 4 MHz band. In view of the fact that the modifications represented about 45% of all the provisional notices in the 4 MHz band and covered every channel in the 4 MHz band, the Board decided to re-examine all the provisional notices in the 4 MHz band. The results of the re-examination were communicated to administrations. The technical criteria applied by the Board for the re-examination and the Board's comments on the results were explained in IFRB Circular-letter No. 385 of 15 July 1977.

f) Resolution No. Mar2 – 2 provided that HF bands reserved for narrow-band direct printing telegraphy and data transmission systems would be made available as from 1 June 1977. In order to assist administrations in achieving efficient use of these frequency bands, the Board had requested them, in IFRB Circular-letter No. 359 dated 20 July 1976, to submit advance information on the frequency assignments they intended to put into use as from that date for this purpose, so as to be able to make appropriate recommendations and provide the assistance foreseen in paragraph 1.2 of Resolution No. Mar2 – 7. Information received from administrations was consolidated and was communicated to the administrations concerned with the Board's comments and recommendations so that administrations were able to conclude in advance the necessary operational arrangements for the efficient use of the frequencies concerned.

g) The Board also drew up a procedure it suggested to be applied by administrations and by the IFRB as from *1 June 1977* for the selection, notification and registration of assignments of pairs of frequencies in accordance with Resolution No. Mar2 – 7. These procedures were communicated to administrations through IFRB Circular-letter No. 377 of 18 April 1977.

h) A provisional internal procedure to be followed in the application of the provisions of Resolution No. Mar2 – 7 was also developed and technical standards were defined for application in the examination to be carried out by the Board when rendering the assistance called for in Paragraph 1.2 of the Resolution.

5.2.10 Regional Administrative LF/MF Broadcasting Conference (Regions 1 and 3), Geneva, 1975

Following the adoption by the Conference of a number of Resolutions requiring continuing action by the IFRB in particular of providing assistance to administrations which did not send frequency requirements for inclusion in the Plan or those which were not represented at the Conference, the Board continued to assist those administrations in the co-ordination of frequency assignments for inclusion in the Plan.

5.2.11 World Administrative Radio Conference for the planning of the Broadcasting-Satellite Service in frequency bands 11.7 – 12.2 GHz (in Regions 2 and 3) and 11.7 – 12.5 GHz (in Region 1) held in Geneva in January/February 1977

The Conference met for five weeks from 10 January to 13 February 1977. The Members of the Board took an active part in the Conference. The Board contributed to the Technical Secretariat of the Conference by providing the Technical Secretary and the Secretaries of certain committees and the secondment of a substantial number of staff members from the IFRB Specialized Secretariat. The Board's contribution was mainly concentrated on the work of Committee 4 (Technical), Committee 5 (Planning) and Committee 6 (Procedures) and their Working Groups.

The Conference adopted provisions and an associated Plan together with 11 related Annexes which are directly related to the work of the Board. These provisions include:

- a procedure for modification to the Plan;
- notification, examination and recording in the Master Register of frequency assignments in the 12 GHz band to space stations in the Broadcasting-Satellite Service in Regions 1 and 3;
- co-ordination, notification and recording in the Master Register of frequency assignments to terrestrial stations affecting broadcasting-satellite frequency assignments in the 12 GHz band;
- preliminary procedures and notification in the Master Register of frequency assignments to stations in the Fixed-Satellite Service in the band 11.7 – 12.2 GHz in Region 2 when frequency assignments to broadcasting-satellite stations in accordance with the Plan are involved;
- procedures for the study of cases of alleged contravention or non-observance of the provisions of the Final Acts or of harmful interference (Article 8 of the Final Acts);
- power flux density limits between 11.7 and 12.2 GHz to protect terrestrial services in Regions 1 and 3 from interference from Region 2 broadcasting-satellite space stations and to protect space services in Region 2 from interference from broadcasting-satellite space stations in Regions 1 and 3;
- provisions governing the Broadcasting-Satellite Service in Region 2 pending the establishment of a detailed Plan.

In addition, the Conference adopted a number of Resolutions among which are the following, involving action by the IFRB, relating to:

- a)* the preparation of information not contained in the Broadcasting-Satellite Plan for Regions 1 and 3, containing for each beam the geographical co-ordinates of the test points, the elevation angle and azimuth of the receiving antenna at each test point and the equivalent protection margin in dB at each test point for all of the assignments in the Plan (Resolution No. Sat-1);
- b)* the bringing up to date of the Master Register for Regions 1 and 3 on the date of entry into force of the Final Acts (Resolution No. Sat-2);

- c) the collection of broadcasting-satellite requirements from Region 2 administrations to enable a comparative study thereof to be made prior to a regional administrative radio conference for Region 2 to be held not later than 1982 (Resolution No. Sat-9).

Analytical methods developed by the IFRB and used in the development of the Plan were also used to produce IFRB Circular-letter No. 376 of 15 April 1977 in response to Resolution No. Sat-1 and other decisions of the Conference. That Circular-letter contains a graphical presentation of the frequency assignments and the associated coverage areas of the Plan by means of a world map for each of the 40 channels of the Plan, the associated list of geographical co-ordinates on the Earth's surface which define the beam area (at the -3 dB contour) for each separate beam contained in the Plan, and a list of technical parameters useful for co-ordination for each "test-point" analyzed during the verification of the Plan.

5.2.12 *Technical planning for the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, 1978*

In conformity with No. 482 of the Radio Regulations, the Board continued the technical planning for the World Administrative Radio Conference for the Aeronautical Mobile (R) Service in the frequency bands allocated exclusively to that Service between 2850 and 17,970 kHz (Appendix 27 to the Radio Regulations), Geneva, 1978.

The Board prepared a report on the implementation of the decisions of the 1966 Aeronautical Conference.

The Board organized a second world-wide monitoring programme for obtaining more up-to-date information on the utilization of the high-frequency bands allocated exclusively to the Aeronautical Mobile (R) Service (IFRB Circular-letter No. 387 of 29 July 1977) and prepared a report on the results obtained.

Pursuant to Administrative Council Resolution No. 802, the Board, in its Circular-letter No. 386 of 28 July 1977, requested Administrations to furnish information concerning frequency requirements for Major World Air Route Areas, Regional and Domestic Air Route Areas and their sub-Areas, VOLMET Areas and long-distance operational control. The Board received replies from 103 Administrations, eleven of which presented no requirements. The information was collated, analyzed and circulated to Administrations in IFRB Circular-letter No. 400 of 24 November 1977.

The Board developed a possible planning method for use by the Conference, which made use of the computer facilities of the Union where such use could result in economy of time and effort for the Conference and at the same time provide more accurate results. Information on the method developed by the Board was published in IFRB Circular-letter No. 401 of 1 December 1977.

The Board carried out several other studies and prepared reports thereon. These included determination of the most appropriate frequency bands to constitute a family of frequencies for each aeronautical area, determination of appropriate sharing criteria for frequency bands for which interference range contours were not available, application of the criteria indicated by the CCIR to avoid interference caused by third-order intermodulation products at aeronautical stations using large frequency complements of the same megahertz order with a view to determining the need for their application in planning, study of the adjacent channel interference question etc.

The Board informed administrations by circular-letter of the information meetings it had organized, to be held on Saturday, 4 February, and Monday, 6 February 1978, to present an opportunity to as many delegates to the Conference as possible to familiarize themselves with the results of the technical preparation of the IFRB.

5.2.13 *Technical planning for the forthcoming World Administrative Radio Conference, 1979*

In conformity with No. 482 of the Radio Regulations the Board continued the review of the matters of substance to be dealt with by the World Administrative Radio Conference, 1979, and continued its studies which may be the subjects of reports by the IFRB to Members of the Union.

5.2.14 *Preparation of the Seminar on Frequency Management and the Use of the Radio Frequency Spectrum and the Geostationary Orbit (October 1978)*

By IFRB Circular-letter No. 390 dated 12 August 1977, administrations were informed of the draft programme for the Seminar to be held at ITU Headquarters from 9 to 20 October 1978. An enrolment form by which administrations could nominate participants was annexed to the letter.

5.2.15 *IFRB training and familiarization for administration officials*

In 1977, the Board received visits of officials or representatives from the following countries or organizations:

Brazil, Belgium, Bangladesh, Bahrain, Ivory Coast, Spain, Egypt, France, Equatorial Guinea, Greece, Guinea, Indonesia, Kenya, New Zealand, Poland, Roumania, American Samoa, United States of America, Venezuela, Yugoslavia, EUROSAT, IATA and INTELSAT.

The main purpose of their visits was to study and familiarize themselves with the administrative and technical procedures, as well as computer applications, used by the Board. They stayed for periods from one day to two months.

5.2.16 *Publications*

The documents prepared by the IFRB in 1977 for publication are listed hereafter.

| | <i>Title</i> | <i>Number of pages</i> |
|-----|---|------------------------|
| 1. | IFRB Circular (weekly airmail) and Special Sections | 3,375 |
| 2. | Ninth Edition of the International Frequency List (List I) and Recapitulative Supplements Nos. 1, 2 and 3 | 7,557 |
| 3. | Ninth Edition of the List of Fixed Stations Operating International Circuits (List II) and Recapitulative Supplements Nos. 1, 2 and 3 | 491 |
| 4. | Ninth Edition of the List of Broadcasting Stations Operating in bands below 5,950 kHz (List IIIA) and Supplement No. 1 | 249 |
| 5. | Sixth Edition of the List of Space Radiocommunication Stations and Radio Astronomy Stations (List VIIIA) | 146 |
| 6. | Periodic Summaries of Monitoring Information (Nos. 192 to 195 inclusive) | 877 |
| 7. | Prefaces to the documents mentioned above in three languages | 686 |
| 8. | Tentative High Frequency Broadcasting Schedules, (March, May, September and November) | 1,099 |
| 9. | High Frequency Broadcasting Schedules | 926 |
| 10. | IFRB Circular-letters No. 370 to No. 402 inclusive | <u>305</u> |
| | Total | 15,711 |

5.2.17 *Use of the ITU computer*

The IFRB used the ITU computer in 1977 for about 53% of the total utilization time (excluding the time used for programme tests) to carry out the following work:

- a) technical calculations for the assessment of the probability of harmful interference in accordance with the relevant provisions of the Radio Regulations, or the preparation of the data used in such calculations;
- b) technical calculations for the examination of notices with respect to the provisions of Article 7;
- c) technical calculations for the assessment of the interference power produced by emissions from a space station at the receiver input of a station of the Fixed Service using tropospheric scatter, pursuant to the provisions of Nos. 470NGA and 470NK of the Radio Regulations;
- d) technical calculations for the assessment of the increase in equivalent satellite link noise temperature, pursuant to the provisions of Appendix 29 to the Radio Regulations;
- e) data processing to bring the information on frequency assignments recorded in the Master Register up to date;
- f) data processing for the preparation of the weekly IFRB Circular, Service Documents and other publications mentioned in this report; production of the tabulations required for publication by the offset process;
- g) production, at the request of administrations or for the internal use of the Board, of up-to-date printed extracts from the Master International Frequency Register.

Furthermore, the IFRB used the computer to carry out special tasks related to the technical preparation for, and the implementation of decisions of Conferences and meetings:

- Regional LF/MF BC Conference 1975
- Preparation of BC-Satellite Conference 1977
- Preparation of Aeronautical Conference 1978
- Resolution No. Mar2 – 7
- Resolution No. Mar2 – 11
- CCIR Report 252-2 (Revision)

In connection with the use of the computer and in pursuance of the Organization and Methods Experts' Report, March 1975, Proposal No. 25 relating to the extended use of the computer in the Notification Department (now named Regulatory Department), the Administrative Council made arrangements for Experts from administrations to assist the IFRB in the study of Appendices 1, 1A and 1B to the Radio Regulations. The IFRB met with Experts from four administrations in November 1977. The subject will be dealt with in an IFRB Circular-letter in 1978.

5.2.18 *Technical co-operation*

In accordance with No. 312 of the Convention, important questions concerning ITU technical co-operation are dealt with by the Co-ordination Committee. The IFRB therefore participated in dealing with those questions concerning technical co-operation which had been submitted by the Secretary-General to the Co-ordination Committee. In addition, in 1977, the Board studied 44 reports of ITU experts dealing with questions such as the technical specifications of equipment and the detailed surveys of several specific routes of the Pan African Telecommunication Network, project reports of the Asian Telecommunication Network, development of the Broadcasting Service in several countries in Asia and Africa, preliminary surveys aimed at development of the maritime telecommunications in all parts of the world, master plan for development of telecommunications in the Middle East and Mediterranean Area, and associated subjects concerning training, planning maintenance, frequency management, monitoring, etc. in the same field and offered its comments thereon.

The IFRB also assisted in briefing of experts, finalizing agency terminal reports and training of fellows visiting the Union as a part of their training programme.

5.2.19 *Other activities*

In accordance with the Convention and the Radio Regulations, Members of the IFRB and staff members of its Specialized Secretariat attended international conferences and meetings as representatives of the Board, to assist and collaborate in the treatment of questions concerning frequency utilization.

5.3 **The International Radio Consultative Committee (CCIR)**

5.3.1 *Introduction*

While this report covers, in principle, the CCIR activities in 1977, statistical data relative to the Final Study Group Meetings held in January-February 1978 have been added to give a better view of the Final Study Group Meetings of the CCIR.

However, as the analysis of the Final Study Group Meetings requires more time, this analysis will appear in the report for the year 1979.

Therefore, the CCIR activities considered in this report will be:

- the preparatory work for the first and second blocks of Final CCIR Study Group Meetings held in September-October 1977 and January-February 1978;
- the first block of CCIR Study Group meetings of Study Groups 2, 4, 5, 9, 10, 11, CMTT and IWP Plen./2;
- the second block of CCIR Study Group meetings of Study Groups 1, 3, 6, 7, 8 and CMV (statistical data only);
- preparation for the WARC-Aeronautical Mobile Service to take place between 6 February-5 March 1978;
- preparation for the WARC-1979 (General Revision of the Radio Regulations following Administrative Council Resolution No. 804 (32nd session, 1977)).

5.3.2 *Final Study Group Meetings*

The Final Study Group Meetings of the first block, comprising Study Groups 2, 4, 5, 9, 10, 11, CMTT and IWP Plen./2, met in Geneva during the period 12 September-20 October 1977, according to the following schedule:

| | |
|----------------|---|
| Study Group 2 | (Space Research and Astronomy): 14-28 September |
| Study Group 4 | (Fixed service using communication satellites): 3-20 October |
| Study Group 5 | (Propagation in non-ionized media): 12-27 September |
| Study Group 9 | (Fixed service using radio-relay systems): 28 September-14 October |
| Study Group 10 | (Broadcasting service (Sound)): 3-18 October |
| Study Group 11 | (Broadcasting service (Television)): 27 September-13 October |
| CMTT | (Transmission of sound broadcasting and television signals over long distances): 20 September-5 October |
| IWP Plen./2 | (Possible broadcasting satellite systems and their relative acceptability): 14-19 October |

This block of Study Group meetings was attended by 680 participants, and 776 technical contributions were considered.

The Final Study Group Meetings of the second block comprising Study Groups 1, 3, 6, 7, 8 and the CMV met in Geneva during the period 9 January-3 February 1978 according to the following schedule:

| | |
|---------------|---|
| Study Group 1 | (Spectrum utilization and monitoring): 23 January-3 February |
| Study Group 3 | (Fixed service at frequencies below about 30 MHz): 9-20 January |
| Study Group 6 | (Ionospheric Propagation): 9-24 January |
| Study Group 7 | (Standard frequencies and time signals): 24 January-3 February |
| Study Group 8 | (Mobile services): 9 January-25 January |
| CMV | (Vocabulary): 25 January-3 February |

This block of Study Group meetings was attended by 395 participants and 449 technical contributions were considered.

Details on participation, registration for each of these meetings and the number of contributions considered by the various meetings are given in *Table I* below.

It is now known that, as a result of these meetings, some 950 new or revised texts are going forward for consideration of the XIVth Plenary Assembly.

TABLE I (concluded)

| Administration | Study Group | | | | | | | | | | | | | | |
|----------------|-------------|----|----|----|----|----|----|----|----|----|----|------|-----|---------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | CMTT | CMV | PLEN./2 | TOTAL |
| Senegal | — | — | — | — | x | — | — | — | — | — | — | — | — | — | 1 |
| Sweden | x | — | x | x | x | x | x | x | x | x | x | x | — | — | 11 |
| Switzerland | x | — | — | x | x | x | x | x | x | x | x | x | x | x | 12 |
| Czechoslovakia | x | — | x | — | — | x | x | x | — | — | x | x | x | — | 8 |
| U.S.S.R. | x | x | x | x | x | x | — | x | x | x | x | x | x | x | 13 |
| Uruguay | x | — | — | — | — | x | — | x | — | — | — | — | — | — | 3 |
| Venezuela | — | — | — | — | — | — | — | — | x | — | — | — | — | — | 1 |
| Yugoslavia | x | — | x | x | x | x | x | x | x | x | x | x | x | — | 12 |
| Totals: 39 | 30 | 15 | 22 | 29 | 29 | 28 | 20 | 31 | 32 | 31 | 32 | 32 | 19 | 21 | |

| Recognized Private Operating Agencies, etc. | Study Group | | | | | | | | | | | | | | |
|---|-------------|----|----|-----|-----|----|----|-----|-----|-----|-----|------|-----|---------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | CMTT | CMV | PLEN./2 | TOTAL |
| Recognized private operating agencies | 13 | 5 | 8 | 24 | 16 | 10 | 4 | 13 | 17 | 15 | 19 | 19 | 6 | 5 | |
| International organizations | 1 | 2 | — | 3 | 3 | 1 | 2 | 4 | 1 | 3 | 3 | 2 | — | 1 | |
| Specialized agencies of the United Nations | — | 1 | — | 1 | — | — | — | 2 | — | — | — | — | — | — | |
| Scientific and industrial organizations | 5 | — | 3 | 10 | — | 2 | — | 9 | 15 | 8 | 7 | 10 | 1 | 2 | |
| Other organs of the ITU | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Registration | 113 | 71 | 59 | 181 | 103 | 87 | 56 | 190 | 169 | 175 | 222 | 167 | 55 | 54 | |
| Contributions | 66 | 77 | 31 | 115 | 117 | 86 | 56 | 180 | 95 | 120 | 149 | 100 | 30 | 3 | 1225 |

5.3.3 *Activities of the individual Study Groups*

5.3.3.1 *Study Group 1 (Spectrum utilization and monitoring)*

Chairman: J. DIXON (U.S.A.)

Vice-Chairman: R. G. STRUZAK (P.R. of Poland)

Study has continued on definitions of interference, on development of mathematical models to facilitate interference studies, on classification and designation of emissions, and on methods for monitoring and measuring emissions and spectrum occupancy. The main goals of Study Group 1 are to provide information and recommendations on fundamental technical factors affecting efficiency of spectrum utilization and on technical aspects of spectrum management.

At the Interim Meeting of this Study Group in 1976, it was decided to delete or revise many texts in Volume I (1974) pertaining to earlier work of the Study Group. Also, five new Reports and two new Recommendations were prepared. New material on modelling of radiocommunication systems, radio noise, interference, bandwidth measurement, monitoring and frequency sharing was prepared for inclusion in Study Group 1 texts.

About 60 new contributions were received for the Final Meeting of Study Group 1, the most important of which concern spectrum utilization problems of importance for the Special Preparatory Meeting in the autumn of 1978 and the WARC-1979.

5.3.3.2 *Study Group 2 (Space Research and Radio Astronomy)*

Chairman: I. RANZI (Italy)

Vice-Chairman: J.P. HAGEN (U.S.A.)

The coverage of the Study Group is expanding very rapidly; in particular, the domain described as Matters of Common Interest to the Space Services has virtually doubled its extent since the XIIIth Plenary Assembly of the CCIR held in Geneva in 1974.

The Final Meeting of Study Group 2 was held in September 1977 and resulted in the adoption of the texts of 10 new Recommendations and 29 new Reports. These new texts represent not only the elaboration of subjects already under study but also the introduction of entirely new subjects into the field of activity of the Study Group.

Activity in 1977 virtually began with the World Administrative Radio Conference (Broadcasting-Satellite) in January, to which the Study Group contributed data concerning attitude control of satellites, and the susceptibility of radio astronomy services to harmful interference. As a result of the discussions that took place at the WARC, activity within the Study Group, especially in the field of general space matters, was accelerated in the period before the Final Meeting eight months later.

At the Final Meeting, the Study Group had to deal with the greatest volume of input that it has seen since its inception in 1970. As a result, the sharing problems associated with the Space Research Service, the Meteorological-Satellite Service, and the Radio Astronomy Service, in particular, have been investigated in detail and appropriate information set out. This was done with particular attention being paid to requirements for the WARC set down for 1979, by way of the CCIR Special Preparatory Meeting scheduled for October-November 1978.

As mentioned above, perhaps the most striking progress was made in the field of "general" space matters. Such new subjects as the service and sharing requirements of microwave sensors, data relay satellites, shaped-beam antennae, radio techniques for the transfer of energy from space, telecommunication systems operating in the infrared and visible light regions of the spectrum, and the search for extraterrestrial intelligence, were all advanced to the point of Reports being proposed to the XIVth Plenary Assembly.

Notwithstanding the variety between the various Services represented in Study Group 2, one common approach is applied from the point of view of presentation of their characteristics. The information is always directed toward a definition of the frequency-sharing characteristics of the Service, from the point of view of vulnerability to interference and liability to cause interference. In many cases, suggestions are made as to the optimum sharing criteria.

5.3.3.3 *Study Group 3* (Fixed service at frequencies below 30 MHz)

Chairman: T. DE HAAS (U.S.A.)

Though most point-to-point communications now use satellite, cables or microwave links, HF radio continues to be one of the valuable means for ensuring long-distance communications, especially for remote areas with low traffic densities; this is especially true for developing countries. Consequently, Study Group 3 continues its studies in this field on a reduced and more selective basis, concerned with recent advances and improvements for HF telephony, printing telegraphy data and facsimile services. The modernization and automation of HF receiving and transmitting centres is one of the main points of interest of this Study Group. Study Group 3 held only one meeting in the current study period, in January 1978.

About 30 documents have been prepared for this Meeting.

More information from developing countries on utilization of HF radiocommunication would be welcome.

In 1976 the former Chairman of Study Group 3, Dr. S. Aritake (Japan) passed away and his functions were taken over by Mr. T. de Haas (U.S.A.) who was till then the Vice-Chairman of the Study Group. (Note: At its January 1978 meeting, the Study Group elected Dr. H. Kaji, Japan, as its new Vice-Chairman.)

5.3.3.4 *Study Group 4* (Fixed service using communication satellites)

Chairman: W. KLEIN (Switzerland)

Vice-Chairman: E.R. CRAIG (Australia)

In April 1977, the Interim Working Party 4/1, first constituted in 1968 to study the efficient utilization of the geostationary satellite orbit, held a meeting in Washington, at the kind invitation of the United States Government. Later, in September-October, the Study Group 4 held its Final Meeting, together with some other Study Groups. These are the main activities of this Study Group.

The work of the IWP 4/1 has been described in previous reports of this series. As the development of space communication continued at a rapid pace, with new techniques and refinements constantly evolving, the members of IWP 4/1 felt it necessary to revise their thinking, especially on the subject of an increase in the total interference noise allowance presently set by a CCIR Recommendation. A cautious approach was advocated with further study being called for because a general increase in the allowance would be adopted. It is, of course, evident, that orbit/frequency spectrum capacity for communication satellites may be increased by relaxing the interference allowance and maintaining unchanged the technical standards of earth and space stations. The meeting also discussed other details based upon some 32 contributions.

Study Group 4 held its Final Meeting in the autumn of 1977. In addition to its regular tasks, namely, to finalize texts for submission to the XIVth Plenary Assembly to be held in June 1978, it had to make preparations for the World Administrative Radio Conference scheduled for 1979, and in particular for the CCIR Special Preparatory Meeting.

Six main Working Groups were constituted to consider some 100 new contributions in addition to the Interim Booklet which was drawn up at the Interim Meeting held in 1976, described in the previous report of this series. They are:

WG 4A: Overall system considerations and terminology

WG 4B: Antenna, earth station and baseband characteristics

WG 4C: Frequency sharing among systems of the Fixed-Satellite

WG 4D: Frequency sharing between fixed-satellite service and terrestrial (radio-relay systems)

WG 4E: Frequency sharing between systems of the fixed-satellite and other satellite services

WG 4F: Transmission performance objective and interface characteristics between fixed satellite and terrestrial systems

In the following will be found brief descriptions of major results obtained during the meeting:

Study Group 4 has compiled a list of definitions which served as guidance to authors of CCIR texts. Two new terms "visible arc" and "service arc", which are associated with the geostationary satellite orbit and which came into use lately, are added to the list.

Two Reports dealing with modulation and multiple access are merged and new material which reflect the current practice are added, particularly in connection with digital systems. On the energy dispersal, which was a means to reduce interference during light-loading conditions, major revision is made to take up methods to deal with the dispersal of an FM signal in television transmissions.

In frequency sharing, emphasis was shifted from analogue to digital systems. Digital technical techniques became of much greater importance when frequency bands higher than 10 GHz were to be used.

More attention was paid to sharing with other space services, such as broadcasting and mobile satellite services, since their up-links share frequencies with the fixed-satellite service.

The study group reviewed existing texts in force as well as the draft texts approved at the Interim Meeting held last year.

The interface of responsibilities of studies on digital systems between the CCIR and the CCITT was also fixed, as far as the satellite systems are concerned.

5.3.3.5 *Study Group 5* (Propagation in non-ionized media)

Chairman: J.A. SAXTON (United Kingdom)

Vice-Chairman: A. KALININE (U.S.S.R.)

The Study Group began the year 1977 by a considerable contribution to the World Administrative Radio Conference (Broadcasting-Satellite) held in Geneva in January. The contribution set out necessary data concerning attenuation due to rain, polarization effects due to rain, a proposed climatic classification of the world from the point of view of rainfall intensities, and the propagation of interference signals due to rain scatter. Attenuation data relative to tropospheric propagation in general at 11-12 GHz was also provided. As a result of queries raised at that Conference, the three Interim Working Parties (5/1, 5/2 and 5/3), by meeting in April and May, succeeded in preparing Reports that provided the necessary information. These Reports were approved at the Final Study Group meeting in September.

The activity of the Study Group is divided into two fields of propagation, ground-wave propagation and tropospheric propagation. The former study has resulted in the production of a world ground conductivity Atlas to be published by the CCIR in 1979, recommended for international planning and coordination purposes. A computer programme for ground-wave conductivity over a spherical Earth in the presence of an exponential atmosphere, allowing for height-gain, has also been prepared and is expected to be ready for use by the end of 1978. Interim Working Party 5/1 is specifically concerned with ground-wave propagation matters.

Two Interim Working Parties are concerned with tropospheric propagation, No. 5/2 dealing with specific transmission loss, while No. 5/3 specializes in radiometeorology. These two IWPs are closely coordinated in their work.

A great deal of new information developed by IWP's was dealt with at the Final Meeting. The question of propagation of interference signals, and the associated subject of coordination distances, were the subject of more useful reports than previously. Propagation factors in interference between earth stations are now defined, and propagation factors in interference from satellites to stations on the Earth are likewise given. The output of Study Group 5 now includes all service data and all interference data relating to both space and terrestrial Services, and to all combinations of these.

During the WARC(BS) of January 1977 it became apparent that data was needed, based on the concept of "worst month" propagation, even though this concept is understood in different ways according

to the Service concerned. The Study Group, as a result, has now prepared a Report that, associated with relevant rainfall data, may be used to predict the worst month figures on the basis of annual propagation figures, the worst month definition being adaptable to an annual or other base as desired. It is expected that this text will enable the planning of broadcasting services at frequencies above 10 GHz to be carried out more accurately and expeditiously.

Finally, in order to keep the publication of its work to a more manageable size, the Study Group carried out a complete revision of all its texts and eliminated all unnecessary repetition. A system of extensive cross-referencing was introduced, and, as a result, the volume of Study Group 5 texts from the XIVth Plenary Assembly is expected to be slightly less than before, even though the amount of information given is considerably larger.

5.3.3.6 *Study Group 6* (Ionospheric propagation)

Chairman: D.K. BAILEY (U.S.A.)

Vice-Chairman: Miss G. PILLET (France)

Investigation of ionospheric propagation continues especially in relation to LF, MF and HF sound broadcasting, maritime mobile communications and to space communications where the influence of trans-ionospheric propagation must be considered.

Some highlights of the last interim period were: the propagation of a method for calculating field strength of signals at VHF propagated by sporadic E layers; the elaboration of a completely revised technical base for a new CCIR computer-based method for estimating sky-wave field strength at frequencies between 2 and 30 MHz; the significant progress made in improving CCIR methods for sky-wave field strength predictions for the frequency range 150-1 600 kHz, and for the study of ionospheric effects on Earth-space propagation.

Over the years, the most important results of the work of Study Group 6 have been achieved through Interim Working Parties. Three new Interim Working Parties were created by the last Interim Meeting.

At the Interim Meeting, in 1976, the total number of contributions received from the participants and other sources was about 180. Five revised Recommendations were drafted and 2 new and 23 revised Reports were prepared.

A further 70 new contributions have been received for the Final Meeting of Study Group 6, the most important of which concern improvements of computer-based calculation methods for sky-wave field strength predictions both in LM/MF and HF bands, and sporadic E propagation calculations (including some information on possible influence of this mode of propagation on long distance interference in VHF TV bands).

5.3.3.7 *Study Group 7* (Standard Frequencies and Time Signals)

Chairman: G. BECKER (F.R. of Germany)

Vice-Chairman: J. McA. STEELE (United Kingdom)

There were no meetings of the Study Group or its Interim Working Parties in 1977. The content of the Report from 1976 is still fully valid. The work concerning CCIR carried out in the various Administrations on the standard frequency and time signal service was for the preparation of the Final meeting of the Study Group in February 1978.

From contributions received one can decide that no drastic changes in the texts of Study Group 7 are to be expected.

5.3.3.8 *Study Group 8* (Mobile Services)

Chairman: W.H. BELLCHAMBERS (United Kingdom)

Vice-Chairman: O.J. HAGA (Norway)

1977 was a year of intense activity of the various Interim Working Parties of Study Group 8.

In May-June, IWP 8/3 met in Stockholm and completed the draft Recommendation on technical characteristics for a Digital Selective Calling System. If this Recommendation is approved by the XIVth Plenary Assembly in June 1978, then the digital selective calling system may be introduced in the Maritime Mobile Service in accordance with the provision of No. 999F Mar2 of the Radio Regulations. The IWP prepared also a draft Recommendation on Operational Procedures for the above mentioned system. This text will have to be completed in the future when operational experience has been gained with the system.

Interim Working Parties 8/1 and 8/4 held their meeting in June-July in Washington, D.C.

IWP 8/1 is responsible for studies on modulation techniques, access problems and interworking with the terrestrial telecommunication networks in the Maritime Mobile Satellite Service.

The IWP prepared a number of Recommendations and Reports on the above mentioned subjects. The Working Party had the benefit of an efficient collaboration of Special Rapporteurs nominated by the interested CCITT Study Groups.

IWP 8/4 dealt with all radiocommunication and operating aspects of the Maritime Mobile Satellite Service and prepared many new Reports on the various subjects under study.

All texts from IWP 8/1 and 8/5 have been transmitted to the Technical Panel of the INMARSAT Preparatory Committee and serve as a technical basis for their deliberations on the establishment of an international maritime satellite system.

During the year 1977, two new Interim Working Parties were set up by the Chairman of Study Group 8, in consultation with the Director and in accordance with Resolution 24-3:

- Interim Working Party 8/5 to study Automated VHF/UHF Radiotelephone Systems. A first meeting of this IWP was held in London in November and a preliminary Report was prepared. This Working Party needs also close cooperation with CCITT experts on questions on interworking with the public switched telephone network.

- Interim Working Party 8/6 was established to study the problems of numerical identification of ship stations as set out in CCIR Draft Opinion BD/8.

A unique ship station identity for all radiocommunication services, e.g. radiotelegraphy – radiotelephony, direct printing selective-calling, data etc., both in the terrestrial and in the satellite services would be of great advantage especially in distress cases.

The studies of this question has far reaching implications, CCITT numbering plans must be taken into account – the administration of the new system needs also careful study.

For this reason close liaison with interested CCITT Study Groups, the General Secretariat and IMCO is of utmost importance. The preparation for the Final meeting of Study Group 8 in 1978 shows the great importance played by all mobile services in modern life. Never before a CCIR Study Group has so much input documentation presented for a Final Meeting. Study Group 8 has a great task to accomplish in the early part of 1978.

5.3.3.9 *Study Group 9* (Fixed service using radio-relay systems)

Chairman: J. VERREE (France)

Vice-Chairman: H. WILLENBERG (F.R. of Germany)

The Study Group 9 held its Final Meeting in the autumn of 1977, overlapping that of Study Groups 4, 10 and 11.

In addition to reviewing the texts in force and those of the Interim Meeting held last year, the Final Meeting of Study Group 9 had to examine some 90 new contributions. The output was to be submitted to the Plenary Assembly of the CCIR scheduled for June 1978. Furthermore, in view of the WARC scheduled for 1979, and the Special Preparatory Meeting preceding it, participants to Study Group 9 were requested to bear in mind these forthcoming events.

5 Working Groups were constituted. They are:

- 9/A - Performance of radio-relay systems. This dealt with availability and reliability, hypothetical reference circuit, noise, error rate of digital radio relay systems.

- 9/B - Radio-frequency channel arrangements and spectrum utilization. The channel arrangements for different frequency bands allotted to radio-relay systems are designed to restrict interference. International agreements on these are particularly important in view of the fact that radio relay systems often cross national frontiers.

The advent of digital radio relay systems makes it necessary to study the compatibility aspect of analogue and digital systems, as well as the channel arrangements for digital systems.

- 9/C - Interconnection at baseband and intermediate frequencies and maintenance.

- 9/D - Problems peculiar to developing countries. Radio-relay systems in these countries are usually of small capacity. In view of the small number of documents submitted, they are allocated to group 9/C during this Final Meeting.

- 9/E - Coordination and sharing of frequencies with other services. As in the past, a Joint Study Group 4/Study Group 9 Working Party was set up to examine frequency sharing between radio relay systems and the fixed satellite service. A report on this subject was thoroughly revised, taking into account the newest propagation data. It is expected that this new text will find its place in the conclusions of the 1979 WARC.

Under agreement between the relevant Chairmen, the revision of the Report relating to frequency sharing between the broadcasting-satellite service and terrestrial services was undertaken by a small Joint 10-11/B and 9/E group. This joint work was conducted during the period in which the meetings of the various groups overlap.

In designing a radio relay system, the noise in a telephone channel, being a measure of the quality of the circuit, is of utmost importance. In order to define it, the CCITT and the CCIR have entrusted its Study to a joint Study Group named CMBD (previously known as the Joint CCITT/CCIR Special Study Group "C"). The report of a meeting of this group held in July 1977 was submitted to Study Group 9, which acted upon it. The result is that the hourly mean noise clause was deleted. This clarifies the situation and this decision would be welcome to Administrations operating radio-relay systems as well as manufacturers building such systems.

The Study Group also rearranged the order of various texts to make them more clear to users.

5.3.3.10 Study Group 10 (Broadcasting Service (Sound))

Chairman: C. TERZANI (Italy)

Vice-Chairman: S.N. MITRA (India)

5.3.3.11 Study Group 11 (Broadcasting Service (Television))

Chairman: M. KRIVOCHEEV (U.S.S.R.)

Vice-Chairman: C.A. SIOCOS (Canada)

During the Final Meetings of these two Study Groups, a large proportion of the time was taken up with a thorough review and development of texts concerning the Broadcasting-Satellite Service in the 12 GHz band with a view to incorporating into them technical material arising from the World Administrative Radio Conference (Broadcasting-Satellite), 1977. To perform this task a Joint Working Group 10/11-B under the Chairmanship of Mr. C.A. Siocos (Canada) was set up. This Group examined all the texts already existing in Volumes X and XI of the XIIIth Plenary Assembly, together with a large quantity of new material.

Another topic of joint interest to the two Study Groups was that of recording broadcasting programmes, both sound and television, on film or magnetic tape. A Joint Working Group, 10/11-A under the Chairmanship of Mr. F.M. Remley (USA) was set up. This Group brought up to date many texts dealing with recording and proposed measures for strengthening cooperation between the CCIR and the International Electrotechnical Commission.

As a result of the work of the Joint Group on satellite broadcasting, a comprehensive series of drafts was prepared concerning the Broadcasting-Satellite Service, special emphasis being given to the use of the 12 GHz band for this purpose.

In view of the forthcoming World Administrative Radio Conference, foreseen for 1979 to make a general review of the Radio Regulations, it has been decided to convene a Special Preparatory Meeting (SPM) of the CCIR for the autumn of 1978 to prepare technical material for submission to the Conference. The interaction between the Study Groups and the SPM is dealt with in a separate section.

In addition, Study Groups 10 and 11 continued their normal activities. Among these may be mentioned:

- the application of digital modulation techniques, which questions are being actively pursued by both Study Groups in close cooperation with the CMTT;
- a new service called "audiography", in which still or slow-moving graphical information, together with a sound commentary is multiplexed in digital form with a television signal for reception by the public;
- the development of "electronic news gathering" techniques in which outside broadcast material (news reporting etc) is transmitted directly to the television programme centre as a video and sound signal produced by a portable video camera and tape recorder;
- the study of a "programme delivery service" in which receiving and recording equipment for television signals may be operated by remote control from the programme source by means of special digital signals multiplexed with the normal television transmission;
- the reception of alphanumerical or graphical information "teletext", which can be received by the public at large at will by use of a simple adapter to the television receiver;
- the transmission of still pictures for reception by the general public;
- the addition of signals for the automatic control of television signals recorded on tape, to enable programmes to be assembled automatically at the transmitting centre;
- the subjective assessment and objective measurement of impairments to television pictures, and the application of subjective impairment grades in the specification of protection ratios;
- the relative merits of circular or elliptical polarization in the transmission of television signals.

Both Study Groups made a comprehensive review of the texts already existing in the Volumes of the XIIIth Plenary Assembly and, as a result, several Reports were transformed into Recommendations, and an Interim Working Party 10/2, under the Chairmanship of Mr. S.N. Mitra (India), brought up to date all the texts dealing with broadcasting in the Tropical Zone.

Texts prepared by the Study Groups for submission to the XIVth Plenary Assembly include:

| <i>Study Groups</i> | <i>10</i> | <i>11</i> | <i>10/11 (Broadcasting by satellite)</i> |
|----------------------------------|-----------|-----------|--|
| New Recommendations | 12 | — | — |
| Modified Recommendations | 8 | 5 | — |
| New Reports | 5 | 2 | 8 |
| Modified Reports | 24 | 19 | 6 |

5.3.3.12 CMTT (CCIR/CCITT Joint Study Group for television and sound transmission)

Chairman: Y. ANGEL (France)

Vice-Chairman: W.G. SIMPSON (United Kingdom)

The CMTT is engaged in the study of digital transmission, including digital coding methods and digital standards suitable for the transmission of television and sound programme signals over long distances. This study requires close coordination between the various groups involved in the development of digital techniques to ensure compatibility between the encoding methods for each application and to minimize equipment cost and complexity.

The main subjects of the CMTT's mandate concern standards for television transmission, measurement, monitoring and maintenance, and the joint transmission of sound and television signals (as well as questions of sound programme transmission). Studies have been finalized leading to a new Recommendation for unified methods of measurement and performance objectives for international circuits using analogue transmission which may carry, at different times, signals using any of the current standards for colour television. The CMTT has undertaken the study of some new topics. The more important of these concern standards for circuits other than the 2.500 km hypothetical reference circuit, distortion due to transient phenomena, the insertion of special signals in the field-blanking intervals of a television signal, the definition of the overall reliability and quality of a television circuit or chain, the type of fault likely to be encountered in an international sound programme circuit or chain and, finally, the quality of sound in broadcasting programmes.

In this field, substantial progress has also been made with the preparation of the basic information necessary for the reference chains and hypothetical reference circuits of fully digital sections or mixed analogue-and-digital sections.

There are new results in transmission of sound and vision signals by time-division multiplex. Much work remains to be done in many fields such as optimum codes for redundancy reduction, error correction and concealment, composition of the bit stream, the effect of arranging codecs in tandem, sampling jitter. Updated technical data are included in a number of Reports.

The Interim Meeting of the Study Group, in 1976, prepared two new and 3 revised Recommendations. These Recommendations covered many aspects of television transmissions over international connections common to the CCIR and CCITT. It also prepared 7 new and 17 revised Reports.

The Interim Working Party CMTT/1 is studying digital systems for the transmission of sound programme and television signals and acts as a coordinating body between CCIR Study Groups 10, 11 and CMTT and CCITT Study Group XVIII.

Close cooperation has also been set up with organizations outside the ITU concerned specifically with the application of digital techniques to television broadcasting.

The Final Meeting of the CMTT, in autumn 1977, adopted definitive versions of Recommendations, Reports, Questions and Study Programmes to be presented to the XIVth Plenary Assembly.

5.3.3.13 CMV (CCIR/CCITT Joint Study Group for Vocabulary)

Chairman: R. VILLENEUVE (France)

Vice-Chairmen: M. DUCOMMUN (Switzerland)
B.A. DURÁN (Spain)

A number of texts concerning terms and definitions were examined by the Study Groups of the CCIR and of the CCITT. A synthesis of their work was prepared in order that the CMV, at its Final Meeting in January-February 1978, might ensure the homogeneity of vocabulary within the CCIR, within the CCITT and between the two CCIs.

The CMV must also ensure the homogeneity of the vocabulary with that of drafts distributed by the mixed group of experts of the CCIR-CCITT/CEI Mixed Coordinating Group as well as a solid participation of experts from the CCIs in these groups.

To this purpose, the Rapporteurs for vocabulary appointed by the Study Groups of both CCIs were invited to participate in the work of the final meeting of the CMV.

A list of terms defined in the texts of the CCIs was prepared for the CCIR for submission to the meeting of the CMV. Similar work is underway as concerns the CCITT.

The preparation of the Orange Book of the CCITT which had absorbed an important part of the activity of the CCITT secretariat in charge of vocabulary was finished in 1977 and, since the termination of this work, participation by the CCITT secretariat in the preparation of the CMV meeting has become more active.

5.3.3.14 *Interim Working Party (IWP) PLEN./2* (Possible broadcasting satellite systems and their relative acceptability)

Chairman: T.V. SRIRANGAN (India)

As laid down in CCIR Res. 38-1, the Final Report of PLEN./2 was made available as an input document to the WARC-77 (Broadcasting-Satellite). The Report has also been printed and published as CCIR Special Report on "Possible Broadcasting Satellite Systems and their Relative Acceptability".

The Chairman, in consultation with the Director, decided to hold a short meeting of PLEN./2 during the period 14 to 19 October inclusive. The principal objective of this meeting was to update the Final Report of PLEN./2, in the light of the latest conclusions of the CCIR Study Groups concerned during their Final Meetings just prior to the proposed PLEN./2 meeting.

This task was accomplished, and it was also decided by PLEN./2 that the updating should be published as an addendum to the Final Report. This addendum is ready in a draft form and, on approval at the XIVth Plenary Assembly of the concerned Study Group texts, it will be finalized and published.

5.3.4 *Editing*

The CCIR Editing Department contributed to the Final Meetings of Block A (Study Groups 2, 4, 5, 9, 10, 11 and CMTT) by revising, with a view to better expression and alignment of languages, the Recommendations, Questions and, generally speaking, all categories of texts which are not Reports – a task which it had been entrusted by the Chairman of the Editorial Committee.

In close collaboration with the Chairman of the Editorial Committee, the Study Group Chairmen and the Councillors responsible for the Study Groups which were meeting, a plan was worked out for a logical presentation of documents submitted by each Study Group to the Plenary Assembly.

Following the Final Meetings of Block A, the Editing Department of the CCIR has been preparing the texts adopted by the Study Groups of Block A (including the revision of Reports for better expression and language alignment) for the Plenary Assembly of the CCIR to be held in June 1978. The ITU has now adopted a new procedure for the capture of texts by electronic means permitting their reproduction and storage. The texts are prepared in such a way that they can be captured for reproduction first as documents of the Plenary Assembly and subsequently corrected for the Volumes by means of the computer.

5.3.5 *Preparation for WARC (Aeronautical) 1978*

A special meeting of Study Group 8 prepared in 1976 a Report to the above-mentioned Conference (see the 1976 Report).

In 1977 the CCIR made available a computer programme to the IFRB for the calculation of 3rd order intermodulation products to be used by the Board in its preparation for the Conference and during the planning stage of the Conference.

5.3.6 *Preparation for the World Administrative Conference for the General Revision of the Radio Regulations (WARC-1979)*

The Study Groups, at their final meetings in September-October 1977 and January-February 1978, carried out a number of studies important to the work of the WARC-1979, and prepared draft Reports and Recommendations for consideration at the XIVth Plenary Assembly.

In accordance with Resolution No. 804 of the Administrative Council, plans have been drawn up for a Special Preparatory Meeting of the CCIR Study Groups to be held from 23 October to 17 November 1978. Proposed terms of reference for this Special Preparatory Meeting, its probable structure and its mode of working were discussed at a meeting of Chairmen and Vice-Chairmen of the Study Groups of the CCIR that was held in Geneva from 13-17 June, 1977. A full report will be submitted to the XIVth Plenary Assembly of the CCIR to be held in Kyoto in June 1978; the Plenary Assembly will make such decisions with respect to the Special Preparatory Meeting as it sees fit.

In general terms, the meeting of Chairmen and Vice-Chairmen agreed on the following:

— that the output of the Special Preparatory Meeting should be in the form of a self-contained report and, taking into account of the subjects of the agenda of the WARC-1979, should, provisionally, follow the outline below:

1. Introduction
2. Terms and Definitions
3. Designation and Classification of Emissions
4. Technical Bases for allocation and regulations concerning Spectrum Utilization, except for Space Systems and Space/Terrestrial sharing
5. Technical Bases for allocations and regulations concerning Spectrum Utilization by Space Systems and for Space/Terrestrial sharing
6. Technical Bases for allocations and regulations concerning frequency bands at present unallocated or unused and new services for which allocations are not yet provided
7. Technical aspects of Optimum Use of the Frequency Spectrum
8. Technical Characteristics of Equipment and Emissions (Article N4 of the Re-Arrangement/Article 12 of the 1976 edition of the RR)
9. Technical aspects of International Monitoring, Interference and Testing, and Identification of Stations (Articles N18, N16 and N23 (plus App. NC) of the Re-Arrangement/Articles 13, 14 and 15 of the 1976 edition of the RR)
10. Radio Wave Propagation Data relevant to frequency allocation, associated regulation and frequency sharing
11. Technical aspects of marking, identifying, locating and communicating with medical transports protected under the 1949 Geneva convention
12. Resolutions and Recommendations of Administrative Conferences since 1959 relating to the CCIR;
 - that the work of the Special Preparatory Meeting should be carried out according to major technical topic areas as outlined in the Table "Structure of Preparatory Work" below. These topics would be suitable for setting up Working Groups at the Special Preparatory Meeting
 - that each Working Group should be headed by a Chairman and that the overall Chairman of the Special Preparatory Meeting himself should be named by the Plenary Assembly at Kyoto
 - that, in order that the preparatory work begin at once, the interests of the proposed Working Groups should be looked after by Topic Coordinators to be proposed by the Director, CCIR

- that the Principal Coordinator, because of the urgency of the work, be named forthwith. The meeting decided on Dr. J.A. Saxton (United Kingdom), Chairman of CCIR Study Group 5, for this post; as coordinators for the various topics, the following are proposed:
 - Dr. M. Joachim (Czechoslovakia)
 - Mr. C. Terzani, Chairman S.G. 10 (Italy)
 - Mr. E.R. Craig, Vice-Chairman S.G. 4 (Australia)
 - Dr. H. Kaji, Vice-Chairman S.G. 3 (Japan)
 - Mr. H. Willenberg, Vice-Chairman S.G. 9 (F.R. of Germany)
 - Dr. F. Horner, nominee for Vice-Chairman S.G. 2 (United Kingdom)
 - Mr. T. de Haas, Chairman S.G. 3 (U.S.A.)
 - Mr. M. Thué, Chairman Editorial Committee (France)
- that the Special Preparatory Meeting report for the use of the WARC-1979 be available for dispatch from the ITU, complete with all appendices, not later than 1st February 1979
- that, in order to achieve the widest possible participation in the work of the Special Preparatory Meeting, which is a joint meeting of CCIR Study Groups, the Director of the CCIR should, in addition to the usual announcement to Study Group participants, circularize all Members of the Union and also all other participants in the work of the CCIR.

During the Final Meetings of Study Groups in Geneva in September-October 1977 and January-February 1978, Dr. Saxton and Mr. Thué began their work with the assistance of the topic coordinators and the secretariat of the CCIR. Study Groups have already supplied details of those documents that are relevant to the work of the Special Preparatory Meeting.

5.3.7 *Technical Cooperation*

The CCIR secretariat maintained close cooperation with the Technical Cooperation Department in the selection of experts and in the choice of equipment being procured for UNDP/ITU projects.

In accordance with the provisions of CCIR Resolution 33-2, active assistance was extended throughout the year with respect to all kinds of radiocommunications problems experienced by the developing countries. This work is normally channelled through the Technical Cooperation Department, and during 1977, 34 technical reports from ITU/UNDP experts were analysed and evaluated with this end in view. In addition to this, several major questions were examined, analysed and appropriate recommendations made, and liaison was maintained on a succession of engineering planning and operation problems. Among the questions on which important proposals were put forward, and considerable time was spent, by the CCIR secretariat were:

- Propagation failures of a 7 GHz system in Senegal;
- Optimum solution to the need for a wide-band radio-relay system across the Red Sea;
- Interconnection between the Niger-Nigeria national telecommunication networks;
- Preparation of an information document for African countries of the planning, installation and operation of a national FM broadcasting network.

In conclusion, it should be said that the above assistance was furnished by the CCIR secretariat without any addition to existing staff; this aspect is relevant to No. 3.5 of the above-mentioned Resolution.

5.4 **International telegraph and telephone consultative committee (CCITT)**

5.4.1 *Introduction*

Previously, the greater part of the year following the Plenary Assembly was spent on preparing the "Book" containing the various Recommendations adopted and the Questions assigned for study by the

Plenary Assembly. In view of the new arrangements made for speeding up the publication of the Book (all volumes published by October 1977), the technical departments have concentrated on the work of the Study Groups and Working Parties. Although the first series of meetings was largely concerned with establishing contacts, setting up Working Parties, appointing Chairmen and drafting guidelines for the study of Questions, some Recommendations have been prepared in certain fields and, in others, work has got off to a good start, particularly in the case of new studies.

5.4.2 *General information on Study Group activities*

Table I lists the meetings held in 1977.

The participation of Member countries in 1977 CCITT meetings, when they were represented by an administration or recognized private operating agency, is summarized in Table II. It should be noted that the average participation was somewhat higher than in previous years.

Table III contains figures, by Study Groups and class of organization, on participation in meetings and on the contributions received.

The following were admitted to participation in the work of CCITT meetings in 1977, under the relevant provisions of the Convention:

— *2 recognized private operating agencies*

United States of America: Hawaiian Telephone Company, Honolulu, Tymnet Inc.,
Cupertino, California

which both chose the 1/2-unit class of contribution.

— *8 scientific or industrial organizations*
(all of which chose the 1/2-unit class of contribution)

Germany (Federal Republic of): Kalle Infotec, Wiesbaden

Spain: Sociedad Española de Comunicaciones e Informatica, S.A.
Madrid

United States of America: Paradyne Corporation, Largo, Florida
Raychem Corporation, Menlo Park, California
Tele-Dynamics, Division AMBAC Industries, Inc., Fort
Washington
Universal Data Systems, Inc., Huntsville, Alabama
The Vadic Corporation, Sunnyvale, California

Switzerland: Christian Gfeller, S.A., Berne

— *1 international organization*

ITO (Ibero-American Television Organization), Mexico

At the end of 1977, the number of organizations of various types admitted to participate in the work of the CCITT amounted to:

- recognized private operating agencies: 49
- scientific or industrial organizations: 124
- international organizations: 23

TABLE I

List of meetings held in 1977

| <i>Date</i> | <i>Meetings</i> |
|-----------------------|--|
| 10-14 January | GAS 3 Editorial Group on rural telecommunications |
| 21-23 February | GAS 5, Economic conditions and telecommunications development |
| 1-4 March | SG III Preparatory Meeting |
| 14-16 March | Laboratory WP |
| 21-29 March | SG XV, Transmission systems |
| 21-29 March | JWP SMM, Maritime mobile service |
| 28-29 March | WP IV/4, Stability of the international network |
| 30 March-1 April | WP IV/1, Maintenance of telephone-type circuits |
| 4-5 April | WP IV/2, Specifications for measuring equipment |
| 19-26 April | SG VII, New networks for data transmission |
| 21-26 April | JWP UMI, International monetary unit |
| 27 April-3 May | SG XVII, Data transmission |
| 27 April-3 May | SG III, General tariff principles |
| 4-6 May | SG VIII, Telegraph and terminal equipment, local connecting lines |
| 4-10 May | SG II, Telephone operation and quality of service |
| 11-19 May | SG XI, Telephone switching and signalling |
| 16-20 May | GAS 6, Economic and technical aspects of the choice of switching systems |
| 13-17 June | GAS 3 Editorial Group |
| 20-23 June | Various GAS 3 Working Parties |
| 20-24 June | SG I, Telegraph operation and quality of service |
| 23-24 June | Laboratory WP |
| 27-29 June | SG XII, Telephone transmission performance |
| 1 July | and local telephone networks |
| 30 June | SG XVI, Telephone circuits |
| 4-5 July | |
| 6-8 July | CMBD, Circuit noise and availability |
| 31 August-2 September | WP IV/5, Maintenance of groups, supergroups, etc. and new systems |
| 5-7 September | WP IV/3, Radio and television circuits |
| 12-13 September | SG XV WP on optical fibres |
| 19-22 September | WP II/2, Human factors |
| 25-28 October | WP on Recommendation X.25 |
| 31 October-4 November | SG IX, Telegraph transmission quality; specification of equipment and rules for the maintenance of telegraph channels |

| | |
|------------------------|---|
| 2-4 November | WP for the study of Question 18/VII |
| 7 November | Meeting of the Chairman and Vice-Chairmen of SG XVIII |
| 7-11 November | SG X, Telegraph switching |
| 8-15 November | SG XVIII, Digital networks |
| 14-18 November | SG XIV, Facsimile telegraph transmission and equipment |
| 16-18 November | JWP LTG, Use of telephone-type lines for purposes other than telephony |
| 16 November | Ad Hoc WP of SGs I and II for study of numbering in the Maritime Mobile Services |
| 17-22 November | WP II/3, Numbering and routing |
| 22-24 November | WP for the study of Recommendation X.21 |
| 22-24 November | Group of Rapporteurs for the study of the "Teletex" Service |
| 22 November-9 December | Various Working Parties of SG XI on Questions of interworking, signalling and switching |
| 23-29 November | WP II/IV, Traffic engineering and international network management |
| 28-29 November | Meeting of the Chairman of SG XV with the Chairmen of SG XV WPs |
| 12-16 December | Various WPs of SG XVII. |

TABLE II

Participation of Member countries in CCITT meetings in 1977

— Study Groups, Plan Committees, and their Working Parties

— Joint Working Parties

— Special autonomous Working Party

| COUNTRY (Administrations or Recognized Private Operating Agencies) | Study Groups and their Working Parties | | | | | | | | | | | | | | | | | Joint Working Parties | | | Special Autonomous Working Party | | | TOTAL |
|---|--|----|-----|----|-----|------|----|----|----|-----|-----|----|-----|------|-------|------|-----|--------------------------|-----|------|--|------|---|-------|
| | I | II | III | IV | VII | VIII | IX | X | XI | XII | XIV | XV | XVI | XVII | XVIII | CMBD | LTG | SMM | UMI | GAS3 | GAS5 | GAS6 | | |
| Algeria | | | | | | | | | | | | | | | | | | x | | | | | 1 | |
| Germany (Fed. Rep. of) | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | x | 20 |
| Saudi Arabia | | | | | | | | | | x | | | | x | | | | | | | | | 2 | |
| Australia | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | | 18 |
| Austria | x | x | x | x | x | | x | x | x | | x | x | x | x | x | | | | x | | | | x | 15 |
| Belgium | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | x | x | | | | x | 18 |
| Brazil | x | | x | | | | | | x | | | | | | | | | | x | | | | 4 | |
| Canada | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | 21 |
| China | | | | | x | x | | | | x | x | | x | x | x | x | x | | | | | | | 8 |
| Cyprus | | | | | | | | | x | | | | | | x | | | | x | | | | | 3 |
| Congo | x | | | | | | | | | | | | | | | | | | | | | | | 1 |
| Korea (Rep. of) | | | | | | | | | | | x | | | | | | | | | | | | | 1 |
| Denmark | x | x | x | x | x | | | | | x | x | x | | x | | x | | | x | x | | x | x | 14 |
| Egypt | | | | | | | | | | | x | | | | | x | | | | | | | | 2 |
| Spain | x | x | x | x | x | x | | x | x | x | | x | x | x | x | x | x | | x | x | | x | x | 18 |
| United States | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Finland | x | x | x | | x | x | | | | x | x | | | | | x | x | x | | x | | | | 11 |
| France | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Greece | x | | | | | | | | | | x | | | | | x | | | | | | | | 3 |
| Hungarian People's Rep. | x | x | x | x | x | | x | | | x | | | x | x | x | x | x | | x | | | | x | 14 |
| India | | | | x | | | | | | x | | | x | | | | | x | | | | | x | 5 |
| Indonesia | | | | | | | | | | | | | | | | | | | | | | | x | 1 |
| Iran | | | x | | | | | | | | | | | | | | | | | | | | | 1 |
| Iraq | | | | | | | | | | | | | | | x | | | | x | | | | | 2 |
| Israel | | | x | x | | | | | | | | | | | | | | | x | | | | x | 4 |
| Italy | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Japan | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Jordan | | x | | x | | | | | | x | | | | | | | | | | | | | x | 4 |
| Kenya | x | x | | | | | | | | | | | | | | | | | | | | | | 2 |
| Lebanon | | | | | | | | | | | | | | | | | | | | | | | x | 1 |
| Liberia | | | | | | | | | | | | | | | | | | x | | | | | | 1 |
| Mexico | | | | | x | | | | | | | | | | x | | | | | x | | | | 3 |
| Nigeria | x | x | x | x | | x | | x | x | | | x | | x | x | | | x | x | | x | x | | 14 |
| Norway | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | | 19 |
| New Zealand | | | | | | | | | | x | | | | | | | | | | | | | x | 2 |
| Panama | | | | | | | | | | | | | | | | | | x | | | | | | 1 |
| Netherlands | x | x | x | x | x | | x | x | x | x | | x | x | x | x | x | x | x | x | | x | x | | 19 |
| Poland (People's Rep. of) | | | x | | | | | | | x | x | x | | | x | | | | x | | | | x | 7 |
| Portugal | x | x | x | x | | x | x | x | x | | | x | | x | x | | x | x | | | x | x | | 15 |
| Syria | | | | | x | | | | | | | | | | | | | | | | | | | 1 |
| German Democratic Rep. | x | x | x | | x | | | | | x | | | x | | x | | | | x | x | | | x | 10 |
| United Kingdom | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Senegal | | | | | | | | | | | | | | | | | | | | | | | x | 1 |
| Sweden | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 22 |
| Switzerland | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | x | 20 |
| Tanzania | | | | | | | | | | | | | | | | | | | | | x | | | 1 |
| Czechoslovakia | | x | x | | | | x | | | | | | | | x | | | | | | | | | 4 |
| Togo | | x | x | | | | | | | | | | | | | | | | | | | | | 2 |
| Tunisia | | | | | | x | | | | | | | | | | | | | | | | | | 1 |
| U.S.S.R. | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | x | | | | x | 17 |
| Venezuela | | | | | | | | x | | x | | | | | x | | | | | | | | x | 4 |
| Yugoslavia | | x | x | | x | | x | x | x | x | | x | | x | x | | | | | | | | | 10 |
| Zaire | | x | x | | | | | | | | | | | | | | | | x | | | | | 3 |
| Total of countries | 24 | 28 | 30 | 23 | 24 | 19 | 20 | 19 | 30 | 24 | 17 | 22 | 20 | 31 | 23 | 17 | 13 | 22 | 27 | 7 | 13 | 28 | | |

TABLE III

Participation of organizations and delegates in CCITT meetings and contributions received in 1977

| | | Study Groups and their Working Parties | | | | | | | | | | | | | | | | Joint Working Parties | | | Special Autonomous Working Parties | | |
|---|---------|--|-----|-----|------|------|------|----|----|-----|-----|-----|-----|-----|------|-------|------|-----------------------|----|----|------------------------------------|----|----|
| | | I | II | III | IV | VII | VIII | IX | X | XI | XII | XIV | XV | XVI | XVII | XVIII | CMBD | | | | | | |
| | | LTG | SMM | UMI | GAS3 | GAS5 | GAS6 | | | | | | | | | | | | | | | | |
| Administrations | | 17 | 23 | 29 | 19 | 22 | 13 | 16 | 14 | 24 | 20 | 15 | 18 | 17 | 29 | 18 | 13 | 8 | 21 | 22 | 4 | 9 | 23 |
| Recognized Private Operating Agencies | | 15 | 15 | 18 | 14 | 14 | 14 | 13 | 13 | 15 | 8 | 11 | 12 | 10 | 21 | 14 | 12 | 8 | 12 | 15 | 4 | 8 | 9 |
| Scientific and Industrial organizations | | 5 | 11 | 5 | 10 | 38 | 10 | 22 | 12 | 34 | 9 | 23 | 27 | 10 | 40 | 28 | 13 | 6 | — | — | 5 | 6 | 23 |
| International organizations | | 4 | 3 | 6 | 1 | 7 | 2 | — | — | — | — | 2 | 1 | — | 2 | 1 | — | 1 | 2 | 1 | — | 1 | — |
| Total number of participants | | 89 | 261 | 130 | 288 | 336 | 58 | 80 | 65 | 492 | 116 | 97 | 131 | 66 | 242 | 148 | 68 | 34 | 66 | 70 | 22 | 46 | 94 |
| Contributions received | normal | 54 | 64 | 28 | 45 | 130 | 27 | 44 | 29 | 106 | 55 | 25 | 95 | 35 | 58 | 101 | 16 | 12 | 25 | 5 | 7 | 3 | 6 |
| | delayed | 7 | 45 | 3 | 56 | 98 | 11 | 14 | 6 | 155 | 7 | 17 | 29 | 6 | 28 | 27 | 1 | 3 | 9 | 2 | — | 3 | 4 |

5.4.3 *Results of the work of CCITT Study Groups and the Plan committees*

A summary of the main results obtained and the studies carried out by Study Groups in 1977 is given below:

5.4.3.1 *Study Groups dealing with telegraph and telex services and data transmission*

A. *Telegraph operation and quality of service*

1. Significant items discussed by Study Group I included Question 8/I on the text communication service and Question 11/I on the introduction of facsimile services. Rapporteurs' groups were formed to study the operational aspects of these services.
2. Study Group I continued its work on Question 12/I on new facilities for telex and other 50-baud telegraph services, and established a preliminary list of classification of telex services and facilities, which was forwarded to Study Group X for examination.
3. In accordance with Resolution No. 2 of the VIth Plenary Assembly of the CCITT, the provisional approval of amended Recommendation F.69 on telex destination codes was put to the vote by means of CCITT Circular No. 46. The conditions for provisional approval were fulfilled. Definitive approval will be a matter for the VIIth Plenary Assembly of the CCITT.

B. *Maritime mobile service*

1. The World Maritime Administrative Radio Conference, Geneva, 1974, instructed the CCITT to review the operating procedures and the principles and methods of accounting for public correspondence in maritime radiocommunications to improve the present methods which are contained in Chapter IX of the Radio Regulations and the articles of the Additional Radio Regulations (1976 edition).
2. Pursuant to the decision of the VIth Plenary Assembly of the CCITT which requested the Joint Working Party SMM to finalize its report early in 1977, JWP SMM held its meeting in March 1977 and worked out, after much discussion, especially on accounting responsibility and on the limitation of accounting addresses, two draft Recommendations, i.e. E.190/F.110 (Operational Provisions for the Maritime Mobile Service) and D.90/F.111 (Charging, Accounting and Refunds in the Maritime Mobile Service). These two draft Recommendations were put to the vote by means of CCITT Circular No. 37 in accordance with the accelerated procedure for the provisional approval of the CCITT Recommendations. The conditions for provisional approval having been met, administrations can now use these Recommendations as a basis for their proposals or corresponding amendments to the Radio and Additional Radio Regulations at the 1979 World Administrative Radio Conference.
3. JWP SMM will continue its studies on future developments in the maritime services and revision of the two above-mentioned Recommendations.

C. *Telegraph transmission*

Study Group IX considered further improvements of Recommendations R.101 and R.111 on time division multiplex systems and the study of transmission plans for networks composed of various standard telegraph channels. The scope of this latter study has been enlarged by the adoption of the two above-mentioned Recommendations at the VIth Plenary Assembly of the CCITT and by the wider range of modulation rates which are now available for public networks.

D. *Telegraph Switching*

1. Study Group X set up two working parties for the study of the Questions assigned to it during this study period. WP No. 1 studied Questions concerning services and facilities, among which were Q.1/X on automatic calling/answering and Q.5/X on new services and facilities: the study of the latter Questions was to be co-ordinated with Study Group I. To WP No. 2 were assigned Questions concerning signalling, including the further development of Type D signalling and its interfaces.

2. In relation to the telex service via maritime satellite systems, the results of the studies in CCIR Interim Working Party 8/1 were examined and amendments were suggested to the draft CCIR Recommendation on the basic signalling principle for the maritime mobile satellite service.

E. *Facsimile Telegraphy*

1. Study Group XIV set up three Working Parties to study various problems concerning analogue facsimile equipment, digital facsimile equipment and facsimile communication procedures.

2. Following the standardization, during the last study period, of a document facsimile machine for transmission of an A4 page in 3 minutes, the Study Group elaborated a draft Recommendation T.X on a 1-minute digital machine.

3. The Study Group also finished drafting the final version of point 5 of Recommendation T.30 on procedures for document facsimile transmission. The complete Recommendation T.30 will be submitted to the VIIth Plenary Assembly of the CCITT for approval.

F. *Telegraph and Data Terminal Equipment*

1. Study Group VIII considered visual display facilities and prepared the preliminary draft of a Recommendation on the use of display screens in telex machines. After further refinement, the Recommendation will be submitted to the VIIth Plenary Assembly of the CCITT for approval.

2. In its studies of new services and facilities, Study Group VIII confined its attention to the terminal equipment and drew up an informative paper on technical facilities of telex terminals, which was transmitted to Study Group I.

G. *Data Transmission*

1. At its 1977 meeting, Study Group XVII prepared amendments to Recommendations dealing with voice-band modems (V.21, V.23, V.26bis, V.27, V.27bis, V.27ter and V.29) and their interfaces (V.10 and V.11) by defining the choice of electrical interface characteristics for modems specified in those Recommendations. The meeting also worked out amendments to Recommendation V.54 on loop test devices by completing a section concerning interface signalling for automatic control of test loops. This amendment required subsequent changes to Recommendation V.24.

2. Each of the above-mentioned amendments to series V Recommendations were put to the vote by means of CCITT Circular No. 36 in accordance with the accelerated procedure for provisional approval. The conditions for provisional approval were fulfilled for each of the amendments. Definitive approval will be a matter for the VIIth Plenary Assembly of the CCITT.

H. *New networks for data transmission*

1. Study Group VII decided to make a number of amendments to series X Recommendations. The meeting finalized the texts of draft new Recommendations X.3, X.28, X.29 on packet assembly/disassembly facilities and revised version of Section 2 of Recommendation X.25. In view of the urgency of implementing public data services in a number of countries, these texts were put to the vote by means of CCITT Circular No. 35 in accordance with the accelerated procedure for provisional approval. The conditions for provisional approval were fulfilled for each of those texts. Definitive approval will be a matter for the VIIth Plenary Assembly of the CCITT.

2. Two new draft Recommendations were drawn up, namely, a Recommendation on a numbering plan for public data networks and Recommendation X.7x on internetwork signalling on a single physical link. Study will continue on further refinements of these texts.

5.4.3.2 *Telephone transmission*

A. *Transmission systems*

1. Study Group XV (Transmission systems) met in Geneva from 21 to 29 March 1977. It approved the distribution of work among the various working parties and the appointment of Special Rapporteurs for the study of various Questions, in accordance with Resolution No. 1 (Volume I of the Orange Book).

2. Contributions suggested some changes in the presentation of Recommendations on cables (series G.600) with respect to two important points, namely, the place to be assigned to the description of cable manufacture and to measuring methods.

3. At its first meeting, the Working Party on optical fibres examined the problem of co-ordinating the studies of the CCITT and the IEC (International Electrotechnical Commission). It held also an informal meeting in Munich on 12 and 13 September 1977 in order to study in particular test methods and basic measurements of optical fibre cables.

4. The Joint Working Party LTG, which deals with the use of telephone-type lines for purposes other than telephony, met once in Geneva from 16 to 18 November 1977. It was noted that it might be necessary to define new types of leased circuits and the Working Party declared its readiness to examine the problem in receipt of sufficiently well-substantiated requests from other study groups concerned.

B. *Digital transmission*

1. Study Group XVIII (Digital networks) met for the first time in Geneva from 3 to 15 November 1977. The study of twelve Questions has been entrusted to four working parties dealing respectively with digital networks, PCM and digital terminal equipments, line transmission, switching and signalling. Questions 1/XVIII (Overall aspects of integrated digital networks and integration of services) has been discussed in plenary, due to its fundamental nature in underlying all other questions.

2. Study Group XVIII discussed a possible approach for jitter specification for Recommendations G.742 and G.751 and the possible establishment of Recommendations for 2 048 kbit/s derived systems and for digital multiplexes using positive-negative justification.

3. To prepare its first meeting, Study Group XVIII had to study over 100 contributions and, for the continuation of its work, it has been decided to appoint Special Rapporteurs to co-ordinate the study of the 18 Questions.

C. *Telephone transmission performance*

Study Group XII held its first meetings in Geneva from 27 June to 1 July 1977. Some progress has been made in the study of certain questions which may give rise to Recommendations before the end of the current study period. A new Question on syllabic companders was proposed to Study Group XII, which requested immediate approval in accordance with the procedure described in Article 58, paragraph 308, of the Convention.

D. *Telephone circuits*

1. Study Group XVI met on 30 June, 4 and 5 July 1977. Discussions were largely focussed on the study of transmission problems in the maritime mobile satellite service, leading to the preparation of a transmission plan for that service and to the preparation of a draft Recommendation.

2. Study Group XVI also prepared a draft Recommendation on the transmission characteristics of leased circuits and passed it for comment to the other Study Groups concerned.

3. Substantial progress was made in the study of other Questions and, in particular, the Question of noise clauses for telephony and the incorporation of digital coding processes in the international telephone network.

E. *Circuit noise and availability*

1. The CMBD met from 6 to 8 July 1977 immediately after the meetings of Study Groups XII and XVI. Agreement was reached on some amendments to be made to Recommendations G.222 (deletion of the time clauses for noise) and G.223 (load on carrier current systems).

2. Amendments were also proposed to CCIR Recommendation 393-2 and to draft Recommendation 208-3.

F. *Special autonomous Working Party (GAS 3)*

1. The GAS 3 Editorial Groups held a select meeting in June in Geneva. At that meeting, the revision of the Handbook on the planning of local networks and the drafting of the first 6 chapters of the Handbook on rural telecommunications were completed. Chapter 7 on rural sound and television broadcasting and Chapter 8 on detailed examples of the development of a rural telecommunications network were finalized at meetings of the Editorial Working Parties in 1978. Finally, in co-operation with GAS 6, GAS 3 has started work on the preparation of a Handbook on the general planning of networks.

5.4.3.3 *Study Groups dealing with telecommunication tariffs and with telephone operation and switching*

A. *Tariffs*

1. The decisions adopted by the VIth CCITT Plenary Assembly which redefine the terms of reference of certain Study Groups, assigned to Study Group III the study of all tariff questions irrespective of the international service concerned (public telegraphs, telex, telephone, data transmission or, leased circuits).

2. At its first meeting in the current study period, in May 1977, Study Group III divided the Questions covered by its wide terms of reference among 4 Working Parties:

III/1 – Private leased circuits

III/2 – Tariff principles to be applied in public data networks

III/3 – Tariffs and accounting for the international telegram service

III/4 – Tariff principles for leased circuit data transmission services.

3. In addition to these four Working Parties, Study Group III is generally responsible:

- for the four Regional Tariff Groups, TAF, TAL, TAS and TEUREM, dealing with international tariff problems in the four Regions of the world: Africa, Latin America, Asia, Europe and the Mediterranean Basin;
- the UMI (international monetary unit) Working Party, which, since the VIth CCITT Plenary Assembly, is no longer a Joint Working Party of several Study Groups (I, II, and III), but a Working Party attached to Study Group III alone.

4. Preliminary examination in May 1977 by the four Working Parties (III/1 to III/4) of the Questions assigned to them revealed complete agreement on certain points and, on others, fairly sharp divergence of views among delegations:

Agreement

- on a simpler method of charging for leased continental circuits;
- on the desirability of world-wide standardization of the conditions for allowances in the event of an interruption on a leased circuit;
- perfect co-operation between representatives of Study Groups VII and III in defining a set of tariff principles for the public data transmission network;
- on the advantages of a so-called “binary” tariff system (comprising a fixed charge and a charge proportional to the length of the telegram) for the telegraph service.

Disagreement

- should a new tariff structure (taking account of the volume of information transmitted) be adopted for the leased circuits service?

5. The UMI Working Party prepared a draft Recommendation providing for the application of transitional methods for settling accounting balances, pending a possible amendment to the International Telecommunication Convention and to the Telegraph and Telephone Regulations annexed to it.

B. Telephone operation

1. As in the case of Study Group III, the terms of reference of Study Group II were changed by the decisions of the VIth CCITT Plenary Assembly in 1976 and now include most of the areas assigned to former Study Group XIII, now abolished. In future, all questions relating to international telephone operation, whether manual, semi-automatic or automatic, will be dealt with by Study Group II alone.

2. At its first meeting in May 1977, Study Group II appointed Special Rapporteurs for various Questions and divided its work for the study period 1977-1980 among four Working Parties:

II/1 – Telephone operations – Instructions – Regulations

II/2 – Human factors

II/3 – Routing and numbering

II/4 – Traffic engineering and network management.

3. Some preliminary results were achieved by these four Working Parties at the meeting of Study Group II and at the meeting (in November 1977) of two of the Working Parties themselves. These results include:

- the preparation of a draft Recommendation on the use of computers in connection with the call numbers of telephone subscribers in foreign countries,
- presentation of a standard set of national instructions on the international automatic telephone service,
- choice of a numbering method for the VHF automatic maritime telephone service,
- the clarification of the basic concepts of traffic engineering (definition of the grade of service).

C. Economic studies

1. Six subjects were assigned by the VIth Plenary Assembly to GAS 5 which, at its first meeting during the 1977-1980 study period, in February 1977, made a general survey of the subjects and decided on the working methods to be followed in drafting the six corresponding chapters of the 1980 edition of its Handbook.

2. On the basis of the general framework established for each subject at the meeting, the authors and co-authors appointed set about collecting and collating the information they required, and set a further meeting for May 1978.

D. Telephone signalling and switching – Study Group XI and GAS 6

1. As the Director of the CCITT pointed out in his Report on Activities to the VIth Plenary Assembly, the amount of work done by Study Group XI, responsible for telephone signalling and switching, might be regarded as almost excessive, but it did in fact match the impact on the CCITT of current technical developments which have made switching a factor of ever-increasing importance.

2. This tempo of activity continued during the first year of the new study period:

- meeting of Study Group XI in May 1977,
- numerous meetings with a dozen or so Working Parties and Sub-Groups in December 1977.

3. The work of Study Group XI can be divided into five main subjects:

- interworking of standardized signalling systems,
- common channel signalling (CCS) for integrated digital networks, i.e. the study of signalling system No. 7, the new designation which has now been officially recognized,
- SPC system languages: preparation of Recommendations supplementing the new Z series of CCITT Recommendations introduced by the VIth Plenary Assembly,
- digital switching,
- automatic switching for national networks (Question 10/XI).

4. Four Working Parties were set up to deal with the first four of these subjects, the third Working Party being subdivided into four sub-groups each with clearly defined terms of reference. The fifth subject covers a field closely related to the activities of the new Autonomous Working Party – GAS 6 – which the CCITT set up in 1976 for the study of the “economic and technical aspects of the choice of switching systems”.

5. In connection with this fifth subject, it was essential to avoid duplication in the initial stages of the studies of GAS 6 and of Study Group XI (Question 10/XI) and to effect the necessary co-ordination of their work; this led to some overlapping of the meetings of Study Group XI and of GAS 6 in May 1977.

6. After discussion between the two Groups, an extremely detailed questionnaire was jointly compiled and circulated with a view to collecting information concerning existing and planned national networks. The replies to this questionnaire, which was widely publicized with emphasis on the main benefits of the survey to the developing countries, will enable GAS 6, in 1978, to construct a number of representative models. These can be used by GAS 6 in its main task of writing a handbook entitled: Economic and Technical Aspects of the Choice of Switching Systems.

7. In addition to the preparation of this basic questionnaire, GAS 6 devoted much of its meeting to the detailed organization of its work during the present study period. A draft Table of Contents for the Handbook which is to be published in 1980, was drawn up, the tasks were allotted to the various members and there is every reason to hope that the undertaking assigned by the Plenary Assembly in 1976 will be carried out energetically and with complete success, despite the obvious difficulties involved in making an objective comparison of rival systems, each bearing the special imprint of its manufacturer.

5.4.3.4 *Maintenance*

1. The terms of reference of Study Group IV were widened by the VIth Plenary Assembly to cover all maintenance questions.

2. It therefore covers an extremely wide field: from transmission maintenance on telephone circuits to the maintenance of the circuits used for VF telegraphy, facsimile, data transmission, and sound radio and television transmissions, to which is now added everything relating to the general organization of maintenance, including the maintenance of international switching equipments. In addition, Study Group IV is responsible for specifications for measuring instruments (series 0 Recommendations).

3. Study Group IV's work was allocated at a meeting of the Chairman and Vice-Chairmen and the Chairmen of the Working Parties of the previous study period, held at the end of 1976. Apart from certain questions to be dealt with by the Study Group itself, five Working Parties were set up for the current study period, each of which held a short meeting in 1977 (April and September). In view of the need for accurate data as a basis, these Working Parties distributed a whole series of questionnaires concerning the measurements to be carried out. The replies received in 1978 will probably make it possible to narrow down still further the maintenance tolerances permitted and to verify the improvement in the quality of the international network resulting from the unremitting efforts of all those who organize and perform maintenance work.

5.4.3.5 *Work of the Plan Committees*

These Committees held no meetings in 1977; but the CCITT secretariat received replies to questionnaires with a view to the publication of a supplement to the World Plan, Geneva 1975, and of a supplement to the Regional Plan for Africa; it also made preparations for the 1978 meeting of the Committees for Latin America and for Asia and Oceania.

5.4.3.6 *Other aspects of CCITT activities*

A. *Activities of the CCITT Department of Technical Editing and Draughting*

1. As envisaged by the VIth Plenary Assembly, September-October 1976, all volumes of the Orange Book were published by October 1977. The latest data processing and photocomposition techniques were applied to a text treatment system developed by the ITU Computer Department. A methodology employing this system, evolved by the CCITT technical editing department, ensured the timely and economic production of this publication.

2. A number of Provisional Recommendations and Manuals have also been processed and are ready for publication:

- Provisional Recommendations (X-Series) on the packet switched service over public data networks,
- Manual on "Recommendations concerning the construction, installation and protection of telecommunication cables in public networks" (loose-leaf editions),
- Manual on "Jointing of plastic-sheathed cables" (new),
- Manual on "National telephone networks for the automatic service - Part D" (new).

3. In addition, most of the development work on the Orange Book Index was completed and work has started on the CCITT List of Terms and Definitions. These should be ready for publication in early 1978.

B. Use of the ITU computer

In addition to the uses referred to in the previous paragraph, the CCITT has continued to use the computer for the preparation of the Plan Books.

C. Technical cooperation

As in the past, the CCITT secretariat continued to work in close collaboration with the Technical Cooperation Department. This again included advice on the choice of experts and on the procurement of technical equipment for ITU/UNDP telecommunication projects. Recommendations were also made in connection with fellowship programmes.

CCITT engineers gave talks to trainees visiting ITU Headquarters and briefed them on the activities of the CCITT.

The CCITT secretariat also examined a number of experts' Reports.

CCITT Handbooks (especially those of GAS 3, GAS 5 and GAS 6) make a substantial and effective CCITT contribution to ITU Technical Assistance.

D. Cooperation with the CCIR

Cooperation with the CCIR was maintained at its former level, not only within Joint Study Groups, but by direct contact at all levels between the secretariats of the two bodies. The CCITT secretariat took an active part in the CCIR final meetings.

E. Cooperation with other international organizations

In 1977, the CCITT had occasion to cooperate with several international organizations. Representatives of the ITU secretariat participated in meetings of ISO, WMO, IMCO and CEPT.

F. Technical information for the press

With the assistance of Study Group Chairmen, technical information notes for the press were published at the end of various CCITT meetings in order to publicize more widely the impact of the CCITT's activities and the part it is playing in the development of telecommunication techniques; for this purpose, the CCITT secretariat collaborated closely with the Information and Public Relations Service of the General Secretariat.

6. TECHNICAL COOPERATION ACTIVITIES

6.1 General features of activities in 1977

In 1977, as in past years, the Union's technical cooperation activities were in conformity with the provisions of Article 4, point 19, of the International Telecommunication Convention (Malaga-Torremolinos, 1973). To this end, the Union continued to: "foster the creation, development and improvement of

telecommunication equipment and networks in new or developing countries by every means at its disposal, especially its participation in the appropriate programmes of the United Nations".

The Union's technical cooperation activities in 1977 were directed towards the realization of the above-mentioned objectives through the implementation of projects which could be grouped under three main headings:

a) *The promotion of development of telecommunication networks in Africa, the Americas, Asia, the Pacific and the Middle East*

The Union continued its efforts to promote the development of telecommunication networks in Africa, the Americas, Asia, the Pacific and the Middle East with a view to their integration into the worldwide telecommunication system, in accordance with the objectives established by the Union's World and Regional Plan Committees. To this end, studies and surveys were carried out by experts engaged by the Union working in collaboration with Member Administrations. For the same purpose, the Union has endeavoured to further its collaboration with the various Governments concerned, the United Nations Regional Economic Commissions, other regional and sub-regional (telecommunication) bodies and organizations, the World Bank and regional banks.

i) *In Africa*

The work programme and activities towards the implementation of the Pan-African Telecommunication Network (PANAFTTEL) – a project conceived and implemented by the Union with the financial assistance of the UNDP – have been intensified in 1977 and the progress made from the technical point of view was very satisfactory. The increase in man-months for the project during 1977 specifically for high level consultants has enabled the PANAFTTEL team to tackle the broader aspects of organization, operations and training. Much better technical inputs to the sub-regional coordination meetings of field activities have been possible along with closer cooperation with other interested organizations. In 1977 the PANAFTTEL team participated at three such meetings organized by the West Africa sub-region in Lomé, Togo (22-25 March); Eastern and Southern Africa sub-region in Mahé, Seychelles (5-9 September); and Central Africa sub-region in Yaoundé, Cameroon (5-7 October).

The PANAFTTEL Coordinating Committee (OAU, ECA, ADB, ITU), conscious of the importance of the development of the network, met at the Union Headquarters from 22 to 23 September 1977 to review, amongst other subjects, the progress made by the project and its relations with different sub-regional economic communities capable of financing some parts of the Network which have not so far found sponsors.

Assistance was provided to the Governments of Kenya, Tanzania, Zambia, Malawi, Niger, Nigeria, Sierra Leone, Guinea and Liberia in the preparation of specifications and tender analysis for their transmission networks. This form of assistance, which continues to be much sought after, is of great importance in the cooperation and coordination spheres.

A modest start has been made on the review and application of recommended tariffs. This work will continue and be expanded as the various parts of the network come into operation.

At the request of the governments concerned, survey of additional links by a small team of ITU experts, assisted by engineers and technicians generously provided by the Government of Tanzania, was started in November 1977. The routes being surveyed are: Kigoma (Tanzania) – Nyanza lac (Burundi), 70 km; Mtwara (Tanzania) – Nampula (Mozambique), 600 km; Tete (Mozambique) – Katete (Zambia), 300 km; and Tete (Mozambique) – Blantyre (Malawi), 180 km. Preliminary studies for this survey were undertaken by the ITU Team Leader over the period August-October 1977.

ii) *In the Americas*

Cooperation with and assistance to the Central American Telecommunication Commission (COMTELCA) and its member Administrations was mainly concentrated in 1977 on the organization of technical meetings:

- in Guatemala, on the accounting aspects of the Central American Telecommunication network,

- in Nicaragua, on outside plant,
- in Honduras, on management and organization of a Telecommunication administration,
- in Costa Rica, on electronic switching and digital techniques.

With the aid of UNDP funds the Union financed the participation of representatives from member Administrations. These meetings constitute an example of technical cooperation among developing countries (TCDC).

In the Caribbean area, the Union has been implementing a regional project aimed at providing assistance and advice in administration, regulations and tariffs to the Administrations of Antigua, British Virgin Islands, Dominica, Grenada, Montserrat, St. Kitts, St. Lucia and St. Vincent. Although some of the many valuable suggestions have been implemented by the participating Administrations, integration and coordination on the sub-regional basis has not yet been fully achieved. A follow up of the Union's activity in coming years, whereby the regional organizations like CARICOM and CDCC will continue to be instrumental in stimulating the integration process, therefore seems indispensable. Furthermore, under this project's activity a technical meeting was organized in St. Lucia in May 1977. It was devoted to radio frequency management, as well as sub-regional integration in this particular field.

As from September 1977, a regional expert, located in the Ministry of Communications in Brasilia, was assigned to the President and technical staff of CITELE, in order to carry out regional studies on the development of telecommunications in compliance with Resolutions adopted by the 2nd CITELE Conference (Rio de Janeiro, November 1975). The financing of this mission in 1977 was paid out of the Union's Operational Fund. In 1978, this regional expert's missions will be financed through a UNDP/ITU regional project.

iii) *In Asia*

The Union continued its effort to assist the participating Asian countries in the establishment of a regional telecommunication network. The most important role of the Union was related to coordination and technical backstopping. During the year the UNDP/ITU input was limited, but some progress in network development was made in collaboration with the Economic and Social Commission for Asia and the Pacific (ESCAP) and the participating Governments.

During the year 1977 assistance rendered to the countries concerned with a view to improving the regional telecommunication network can be summarized as follows:

- Survey for Afghanistan-India troposcatter link.
- Route survey for the Afghanistan-Pakistan microwave link.
- Finalization of the type of transmission systems for the India-Pakistan routes.
- Formulation of proposals for inter-country circuits and supergroup allocations.
- Coordinating and servicing inter-governmental technical level meetings for network implementation.
- Servicing various ESCAP meetings dealing with telecommunications.

iv) *In the Pacific*

Network development in the South Pacific has been characterised by the feasibility study project for a South Pacific Telecommunication Network. This project received close and effective collaboration and support from the South Pacific Bureau for Economic Cooperation (SPEC). The feasibility study made significant progress during the year. Identification of needs and basic traffic data have been updated. Special assistance was provided in the development of satellite systems. This included site selection, cost calculations, cost benefit analysis, tariff questions and drawing up of specifications for the satellite stations. Assistance was also provided to SPEC and the governments in the preparation of documents for loan applications to the European Economic Community for financing of the regional network's development.

The Union's action programme for network development in the South Pacific was examined and approved by a Regional Telecommunication Meeting sponsored by SPEC in July 1977.

v) *In the Middle East*

During 1977 work continued on the Feasibility Study/Preinvestment Survey for the Middle East Telecommunication Network. Activities were stepped up in connection with final meetings and preparations for meetings of the sub-regions, with a view to finalizing a comprehensive survey report for the whole region by October 1978, when Phase II of the project is scheduled to be terminated. A survey of work in the region, divided into six sub-regions, is being carried out by a team of experts working in close cooperation with the national Administrations concerned (all the Arab League countries, Bulgaria, Cyprus, Ethiopia, Greece, Malta, Turkey and Yugoslavia), the Arab Telecommunication Union and the Arab States Broadcasting Union. The survey includes a detailed study of regional telephone, telegraph and broadcasting requirements and will provide general specifications concerning routes, circuits, transmission systems, switching and signalling systems and tariffs. The survey will also include a comprehensive study of the requirements for territorial and satellite circuits, both Arabsat and Intelsat.

A course on the introduction to electronic switching systems was organized within the framework of the above-mentioned project in Jeddah from 1 to 27 October 1977. The course was prepared and conducted by six experts from Belgium, France, Germany (Federal Republic of), Japan, Sweden and the United Kingdom. The venue for the preparation was the Post Office technical Training College at Stone (United Kingdom). The course was financed by Saudi Arabia.

In connection with the integration of national networks into the regional network, major decisions are required to be taken by the Telecommunication Administrations concerned. Two such decisions are those concerning signalling and tariffs. In order to acquaint the Administrations of the region with the status of development in the respective fields, two seminars on these subjects were organized in September/October 1977 in Amman (Jordan).

Two additional special reports covering the subject of Tariff Questions for the whole region, as well as television and broadcasting requirements for the whole region, are under preparation.

In 1977, 61 expert missions were carried out in connection with the promotion of development of telecommunication networks in Africa, the Americas, Asia, the Pacific and the Middle East.

b) *The strengthening of national telecommunication technical and administrative services in developing countries*

The improvement and modernization of telecommunication facilities made it indispensable in many developing countries to reorganize and/or reinforce administrative and technical services. The projects with such objectives covered practically all branches of telecommunications and included, in addition to expertise, substantial amounts for fellowships and equipment.

The following are selected examples falling within this specific category:

- Assistance in the maintenance of radiocommunication equipment, Comoros.
- Master Development Plan, Botswana.
- Assistance in the operation and maintenance of Kaolack (Senegal) — Banjul (Gambia) telecommunication link.
- Assistance in the preparation of the plan of execution of telecommunication development, Cape Verde.
- Help to the administration to set up a basic telecommunication network, Equatorial Guinea.
- Participation in a special mission to Mozambique organized under the leadership of the UN to assess the extent of economic loss and destruction of property caused by the Rhodesian aggression.
- Provision of overall management, operational and advisory services to ANTEL, El Salvador.
- Purchase of equipment and provision of advisory assistance to the Central Telecommunication Laboratory, Cuba.

- Assistance in the drafting of the Telecommunication Law and in the acceptance tests of the satellite earth station, Haiti.
- Consultancy services to the Research and Development Centre set up in Campinas by TELEBRAS, Brazil.
- Operational assistance to the Belize Telecommunication Authority.
- Consultant missions in organization and legislation, Surinam.
- Establishment of a planning unit, Afghanistan.
- Communication media planning survey, Afghanistan.
- Preparatory assistance for Broadcasting and Television development, Bangladesh.
- Evaluation of tender documents for switching and microwave equipment, Nepal.
- Assistance in planning design of a Radio Receiving Station, Singapore.
- Planning, programming and introduction of new techniques in Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates and P.D.R. Yemen.
- Manpower and training needs survey in Qatar and United Arab Emirates.

In 1977, 168 expert missions (32 per cent) were devoted to this type of activity. While the experts concerned acted, for the most part, as advisers, they were also called upon to participate actively in the execution of projects in a number of countries in view of the lack of qualified counterparts who were then trained on-the-job whenever possible. In addition, a number of experts acted as OPAS officials, holding operational and executive posts, such as: Permanent Secretary, Ministry of Works, Police Telecommunication Planning Engineer, Financial Controller, Chief Accountant Telecommunications Controller, Chief Engineer, Operations and Maintenance Engineer, Traffic Superintendent, Technical Manager, Senior Telecommunications Engineer and Planning Engineers in various specialities.

c) *The development of human resources for telecommunications*

As in previous years, almost two-thirds of the total field expenditure of the Union's technical cooperation programmes was disbursed for the training of staff to meet the manpower demand in various sectors of telecommunications in developing countries. This type of assistance consisted in establishing and/or improving national and multinational training institutions, as well as in-service and on-the-job training, organization of short-term specialist meetings and seminars, and implementation of fellowships. The aim was to meet immediate requirements in specialized staff and to cover new services and techniques introduced by the countries concerned. In more advanced environments training activities centred around new technologies, recent system developments and possible new services based thereon.

The Union acted as Executing Agency for important training projects in:

Africa

Country projects: Algeria, Cameroon, Guinea, Morocco, Nigeria, Somalia, Tunisia and Zambia. This latter started to cater for trainees from Namibia.

Multinational projects: Kenya (Kenya, Uganda and Tanzania)

Malawi (Botswana, Lesotho, Malawi and Swaziland)

These two projects also covered assistance to national schools in the countries listed in brackets.

Senegal (Benin, Central African Empire, Ivory Coast, Guinea, Upper Volta, Mali, Mauritania, Niger, Senegal and Togo)

The Americas

Country projects: Bolivia, Brazil, Ecuador, Jamaica and Surinam

Multinational project: *El Salvador* (Costa Rica, El Salvador, Guatemala and Nicaragua)

Asia and the Pacific

Country projects: Afghanistan, Bangladesh, Burma, India, Indonesia, Mongolia, Nepal and Papua New Guinea

Multinational project: *Fiji* (Cook Islands, Fiji, New Hebrides, Niue, Tonga and Western Samoa)

The Middle East

Country projects: Saudi Arabia, Jordan, Kuwait and Yemen Arab Republic.

All the above projects were financed by the UNDP with the exception of those in Kuwait and Surinam which were implemented on the basis of Trust Funds arrangements signed by the Union with the authorities of these countries.

Furthermore, there were several small training projects providing for one to two experts or instructors who assisted with the development or activities of national training schools (Netherlands Antilles, Argentina, Chile, Colombia, United Arab Emirates, Equatorial Guinea, Guyana, Mauritania, Niger, Pakistan, Peru, Portugal, Qatar, Chad, Trinidad and Tobago, Uruguay).

Fifty-six per cent (297) of all the expert missions in 1977 (526) dealt directly with the development of human resources in telecommunications, the experts serving as instructors, lecturers, training experts or project managers. On a regional basis, the percentage of missions devoted to the field of training was 58 per cent in Africa, 53 per cent in the Americas, 70 per cent in Asia and the Pacific and 44 per cent in the Middle East.

Other significant points to be mentioned in respect of the development of human resources in the field of telecommunication are the progress of the UNDP/ITU inter-regional project on curriculum development in the field of telecommunications (CODEVTEL) and the information of fellowships and seminars (see Sections 6.4.5, 6.4.6 and 6.8). Furthermore the Telecommunication Institute in Oran (Algeria) has launched university level training and obtained, under the auspices of the Union, collaboration from similar Institutions in Paris (France), Bucarest (Roumania) and Lausanne (Switzerland).

6.2 Quantitative appraisal of 1977 achievements

The volume of aid rendered by the Union to developing countries in 1977 was heavily affected by the financial constraints of the UNDP.

The main features of aid provided from all sources were:

- a) 526 expert missions were carried out, against 493 in 1976 (these figures include associate expert assignments);
- b) 423 fellows (including 153 participants in short-term group training) underwent training abroad, against 497 in 1976;
- c) 178 projects were assigned to the Union against 238 in 1976;
- d) US dollars 4,174,868 ¹⁾ worth of equipment was delivered to various field projects against US dollars 4,812,154 in 1976;
- e) 6 projects were being implemented, partially or entirely, under sub-contracts, against 13 in 1976.

The total expenditure for project implementation amounted to US dollars 17,095,503 against US dollars 20,241,527 in 1976 (a decrease of 15.5 per cent).

¹⁾ Includes US dollars 373,493 for premises under a UNDP/ITU project in Chad.

The total expenditure for all types of project, by region, was as follows:

| | US dollars | | US dollars |
|------------------------------|----------------------------------|---------|---------------------------|
| Africa | 5,472,733 (32.0%) | against | 7,196,106 (35.6%) in 1976 |
| Americas | 2,684,650 (15.7%) | against | 3,777,772 (18.7%) in 1976 |
| Asia and Pacific | 3,459,626 (20.2%) | against | 4,064,586 (20.0%) in 1976 |
| Europe and Middle East | 4,975,808 (29.1%) | against | 4,785,411 (23.7%) in 1976 |
| Inter-regional | 502,686 (3.0%) | against | 417,625 (2.0%) in 1976 |
| TOTAL | 17,095,503 ⁽¹⁾ | | 20,241,500 |

The US dollars 17,095,503 field expenditure for 1977 broken down by project component and by region is as follows:

| Project components | Africa | Americas | Asia and Pacific | Europe and Middle East | Inter-regional | TOTAL |
|--|------------------|------------------|------------------|------------------------|----------------|-------------------|
| | US dollars | | | | | |
| Experts and associate experts | 3,527,617 | 1,585,089 | 2,002,679 | 2,950,087 | 393,042 | 10,458,514 |
| Administrative support personnel | 71,439 | 41,040 | 63,292 | 134,576 | 23,135 | 333,482 |
| Sub-contracts | 718,893 | — | — | 200,350 | — | 919,243 |
| Fellowships | 264,619 | 78,690 | 288,788 | 234,362 | — | 866,459 |
| Group training | 101,517 | 80,269 | 29,647 | 146,599 | 38,976 | 397,008 |
| Equipment | 685,176 | 865,300 | 1,019,532 | 1,224,400 | 6,967 | 3,801,375 |
| Miscellaneous | 103,472 | 34,262 | 55,688 | 85,434 | 40,566 | 319,422 |
| TOTAL | 5,472,733 | 2,684,650 | 3,459,626 | 4,975,808 | 502,686 | 17,095,503 |

6.3 Financial resources

In providing technical assistance to developing countries, the Union remained fully dependent on external financial resources, except for the assistance rendered by the Group of Engineers (Section 6.7) as also through the Operational Fund (Section 6.11) and the contributions made by the specialized secretariats of the CCIR, the CCITT and the IFRB. Thus, in 1977, 12,485,436 US dollars (72.0 per cent) of the total value (17,095,503 US dollars) of assistance rendered to developing countries, was financed by the United Nations Development Programme (UNDP), while the remainder (4,610,067 US dollars) came from Trust Funds, associate expert arrangements and other sources.

¹⁾ This amount does not include the sum of 355,890 Swiss Francs, disbursed in application of Resolution No. 17 (Malaga-Torremolinos) (see Section 6.7), and Administrative Council Resolution No. 798. — Operational Fund (see Section 6.11).

The table below shows the source of financing in 1977, classified by region (in US dollars):

| Financial resources | Africa | Americas | Asia and Pacific | Europe and Middle East | Inter-regional | TOTAL |
|-------------------------|------------------|------------------|------------------|------------------------|----------------|-------------------|
| UNDP | 4,475,922 | 2,369,636 | 3,206,596 | 1,887,640 | 375,594 | 12,315,388 |
| Trust Funds | 488,225 | 215,629 | 17,406 | 3,010,944 | 43,348 | 3,775,552 |
| Associate experts | 328,350 | 92,955 | 189,804 | 71,020 | 83,744 | 765,873 |
| Other sources | 180,236 | 6,430 | 45,820 | 6,204 | — | 238,690 |
| TOTAL | 5,472,733 | 2,684,650 | 3,459,626 | 4,975,808 | 502,686 | 17,095,503 |

6.3.1 United Nations Development Programme (UNDP)

In 1977, 126 projects were assigned to the Union by the UNDP, 110 of which were country projects (45 in Africa, 19 in the Americas, 29 in Asia and the Pacific and 17 in Europe and the Middle East), the remaining 16 consisting of 15 regional/multinational projects (6 in Africa, 5 in the Americas, 3 in Asia and the Pacific and 1 in Europe and the Middle East) and one inter-regional project. During the year under report, 27 projects were completed and 11 had no activity.

Out of 126 UNDP/ITU projects, 31 required major contributions by the Governments concerned and the UNDP. Twenty-four of these projects were in the training sphere, the remainder concerned development of networks, facilities, services or research (six) and feasibility study (one).

Furthermore, in 1977 the UNDP financed the services of only one regional expert (in Asia) for a total of 12 man-months, as against eight in 1976, due to the financial constraints and cutbacks operated in the regional programme in 1976. In order to meet pressing requirements for such expertise and pending the outcome of discussions with the UNDP regarding their further financing of regional expert missions, the Union made some emergency arrangements (see Section 6.11).

It should be noted that the development in the UNDP/ITU technical assistance activities of regional (sub-regional/multinational) character stagnated in the course of the year. The total input under these projects amounted to 2,678,934 US dollars as against 3,778,808 US dollars in 1976.

There were 19 UNDP/ITU projects on which expenditures exceeded 250,000 US dollars in 1977 while on 15 projects expenditures were between 100,000 and 250,000 US dollars. The expenditures on the remaining projects were below 100,000 US dollars each.

Details on the implementation of UNDP/ITU projects are given in Annex 6, Table I.

In addition, in 1977, the Union continued its collaboration with the Universal Postal Union (UPU) on the implementation of UNDP-assisted projects. The UPU was associated with the Union, for the postal section, in the execution of the following projects for which the Union is the Executing Agency: training centres in Afghanistan, Cameroon, Kenya, Malawi and Portugal.

The Union was also responsible for the implementation of projects in four least developed countries (for details see Section 6.8).

6.3.2 *Trust Funds*

Under the Trust Funds arrangements between the Union and each of the following countries: Algeria, Netherlands Antilles, Saudi Arabia, Botswana, the United Arab Emirates, Gambia, Ghana, Guinea, Iraq, Kuwait, Lesotho, Niger, Oman, Qatar, Surinam, the Yemen Arab Republic and Zambia, assistance was provided to these countries in the form of 73 expert missions, 29 fellowships and equipment to the value of 1,097,406 US dollars. In addition, funds donated by:

- the Government of Switzerland permitted the continuation of six expert missions in Bolivia and the purchase of equipment to the value of 50,499 US dollars;
- the Government of the Netherlands permitted the recruitment of a three-man team of experts for Surinam;
- the Government of India allowed one consultant to continue a regional assignment in Asia and the Pacific;
- the Government of Saudi Arabia, for a Regional Course on electronic switching held in Jeddah in October 1977, permitted the recruitment of six lecturers, who undertook a total of 23 missions for preparatory work, lecturing and final editing, as also the granting of 24 fellowships to participants from nine countries.

Additionally, on the basis of a contract signed between the Government of the Somali Democratic Republic and the European Economic Community, funds were provided by the latter to permit four expert missions to be continued at Mogadiscio and equipment to a value of 20,153 US dollars to be purchased.

Furthermore, the Arab Fund for Economic and Social Development (AFESD) made a Trust Fund contribution to the two seminars organized by the ITU in Amman (Jordan), one on Signalling Systems followed by a second on International Tariffs. Twenty-one fellowships to participants from nine countries were financed out of this contribution.

A contribution received from the Government of France, for services provided by the ITU in the framework of the CODEVTEL project, was utilized for financing fellowships for participants from the various countries who attended one of three regional seminars organized by the CODEVTEL project.

At the request of the Asian Development Bank, the ITU provided two specialists in switching/ outside plant and underground telephone cables to assist in the evaluation of tenders for Tonga and the review of the Tonga telecommunication project (ITU assistance for these missions amounted to 6,630 US dollars).

Contributions received from various donors for the Global project on rural telecommunications amounted to 47,270 US dollars and the 1977 expenditures were 6,072 US dollars.

The total Trust Funds contributions amounted to 3,766,478 US dollars.

6.3.3 *Associate expert scheme*

The costs of the 42 associate expert missions were borne by the donor countries, i.e.

| | <i>US dollars</i> |
|--|-------------------|
| Germany, (Federal Republic of) | 163,471 |
| Denmark | 153,540 |
| Finland | 11,287 |
| France | 23,514 |
| Japan | 37,760 |
| Norway (credit on 1976 expenditures) | (1,335) |
| Netherlands | 284,916 |
| Sweden | 92,721 |
| Total | <u>765,874</u> |

6.3.4 *Other sources*

The following technical cooperation activities of the Union were financed from various sources:

The Union participated in two UNESCO Projects, one for rural telecommunications in Afghanistan providing specialist services under subcontract and one for sound and television broadcasting in Bangladesh providing six months of advisory services on system engineering and engineering/operations training (ITU assistance within this project amounted to 24,213 US dollars).

Furthermore under the United Nations Capital Development Fund, the Union provided two specialists who advised the Government of Mali on rural broadcasting matters. The total expenditure for the Union's participation in 1977 amounted to 6,681 US dollars (US dollars 4,237 of which will be paid in 1978).

Under Trust Funds arrangements between the UNDP and the Swedish Government (UNDP/SIDA/FT) the Union was the executing agency for projects in Lesotho and Swaziland. Six experts were provided by the Union for these projects.

Total expenditures under the above items amounted to US dollars 238,690.

6.4 *Analysis of ITU inputs*

6.4.1 *Experts in the field in 1977*

In 1977, 526 expert missions (totalling 2706 man/months of service) were executed by 437 experts (as against 493 missions executed by 424 experts in 1976) comprising:

- 341 missions under UNDP, including eight OPAS assignments, as also two experts on a UNESCO/ITU/UNDP project (124 in Africa, 80 in the Americas, 87 in Asia and the Pacific, 43 in Europe and the Middle East and 7 inter-regional);
- 112 missions under Trust Funds (FT), including five FT/OPAS assignments (21 in Africa, 13 in the Americas, 3 in Asia and the Pacific, 74 in Europe and the Middle East, and one at the inter-regional project for curriculum development). The increase in Trust Funds missions was partly due to the need to obtain alternative financing for six missions in the Americas and one in Asia and the Pacific to permit the continuation of assignments originally financed under UNDP;
- 42 associate expert assignments (17 in Africa, 5 in the Americas, 13 in Asia and the Pacific and 4 in Europe and the Middle East and 3 inter-regional);
- 14 short missions financed by the Union under Resolution No 17 of the Plenipotentiary Conference, Malaga-Torremolinos, 1973;
- Two missions under a UNCDF project (United Nations Capital Development Fund) for Mali;
- Six missions in Lesotho and Swaziland financed under UNDP/SIDA/FT;
- Seven missions under the ITU Special Fund for Technical Cooperation;
- Two missions under the Operational Fund (Administrative Council Resolution No. 798).

In addition to the expert missions listed above, various projects were implemented under sub-contracts, carrying a manpower element. (See Table 2 of Annex 6).

The 437 experts mentioned above were nationals of 44 countries, Members of the Union. These experts executed the 526 missions as detailed in the table below which gives classification by nationality. Each national has only been counted once, irrespective of the number of missions carried out.

| No. Experts | Nationals of (country) | No. Experts | Nationals of (country) |
|-------------|---|-------------|------------------------|
| 70 (86) | United Kingdom | 2 (3) | Ethiopia |
| 51 (64) | France ¹⁾ | 2 (3) | Jordan |
| 39 (44) | India | 2 (3) | Portugal |
| 38 (45) | Germany (Federal Republic of) ²⁾ | 2 | Spain |
| | | 2 | Finland ⁷⁾ |
| 32 (38) | Sweden ³⁾ | 2 | Hungary |
| 22 (28) | Netherlands ⁴⁾ | 2 | Roumania |
| 21 (28) | Switzerland | 2 | Sri Lanka |
| 20 (23) | Japan ⁵⁾ | 2 | Yugoslavia |
| 16 (20) | United States of America | 1 (4) | Belgium |
| 14 (19) | Norway | 1 (2) | Costa Rica |
| 8 (10) | Australia | 1 (2) | Tunisia |
| 8 (10) | Ireland | 1 (2) | Turkey |
| 8 (9) | Canada | 1 | Bangladesh |
| 8 (9) | Denmark ⁶⁾ | 1 | Brazil |
| 9 | Egypt | 1 | Bulgaria |
| 7 (8) | New Zealand | 1 | Greece |
| 7 | Argentina | 1 | Guyana |
| 7 | Italy | 1 | Lebanon |
| 6 (7) | Pakistan | 1 | Nepal |
| 6 | U.S.S.R. | 1 | Peru |
| 5 | Poland | 1 | Syria |
| 4 | Colombia | | |
| | | 437 (526) | |

Note: Figure in brackets denotes the number of missions accomplished by the nationals of the country concerned. Where no such additional figure is indicated, the experts carried out only one mission each.

- 1) including 1 associate expert
- 2) including 10 associate experts
- 3) including 7 associate experts
- 4) including 12 associate experts
- 5) including 2 associate experts
- 6) including 9 associate experts
- 7) including 1 associate expert

Three hundred and fourteen new expert missions were commenced in 1977 (as against 179 in 1976) — an increase of 75 per cent. This figure includes inter alia:

- thirty nine missions undertaken by experts already in the field who were transferred to new posts or projects;
- one hundred and nine short-term highly-specialized missions executed under special service agreements (against 65 in 1976). (This type of contracting of experts continued to enable the Union to respond without delay to urgent requests from governments for highly-qualified specialists for short advisory or consultancy missions);
- ninety-four short missions under short-term contract;
- eighteen associate expert assignments, including two associate experts who were transferred to new duty stations.

The following table compares the periods required for the recruitment of experts during the years 1971 to 1977.

| Period required | Number of experts | | | | | | |
|---------------------------|-------------------|------------|------------|------------|------------|------------|------------|
| | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 |
| Up to 6 months | 28 | 46 | 61 | 80 | 158 | 106 | 230 |
| 7 to 8 months | 17 | 15 | 15 | 19 | 30 | 19 | 29 |
| 9 to 10 months | 20 | 23 | 15 | 26 | 26 | 17 | 17 |
| 11 to 12 months | 7 | 19 | 10 | 14 | 16 | 11 | 13 |
| 13 to 18 months | 15 | 14 | 13 | 25 | 30 | 17 | 11 |
| More than 18 months . . . | 5 | 6 | 15 | 2 | 13 | 9 | 14 |
| TOTAL | 92 | 123 | 129 | 166 | 273 | 179 | 314 |

(The recruitment period is defined as the time gap between the date of commencement of prospection and the date on which the expert takes up his assignment.)

From this table it can be seen that there was a considerable modification in the time required for the recruitment of experts, due particularly to the greater number of short missions for which release and clearance were easier and more rapid to obtain. In those cases where long delays have occurred, this was due in the main to the need to retard the commencement of missions to correspond with the man-months allocated for a given UNDP project, following reductions resulting from the financial constraints.

The period required for recruitment was comparable to that of other UN Agencies and was on an average shorter than that required for bilateral programmes, including also the associate expert scheme (average time 9 1/2 months). The time required for the various stages of the recruitment process remained more or less the same as in previous years for the longer-term posts but was infinitely more rapid in the case of appointments under Special Service Agreements, 73 of the 109 missions being arranged (from commencement of prospection to entry on duty) in a period of one to two months; the longest time factor was the need for vaccinations of the selected candidates. Similarly 43 of the 94 short-term contract assignments were filled within a one to two month period.

While the increasing demand for expertise in the more sophisticated and very recent technologies (where the number of specialists are limited) continued to affect implementation of the longer-term assignments, no untoward delays were experienced for short missions. Telecommunication Administrations have indeed been most cooperative in releasing highly-qualified specialists to meet the short-term demand.

For certain missions delays continued to be engendered by factors such as:

- the growing demand for experts having prior experience in modern educational technology in addition to their specialist telecommunication knowledge;
- the combination of the solicited technical qualifications with the requisite language knowledge (French or Spanish);
- the environmental conditions, availability of educational facilities for experts' children, as also the uncertainty as regards further employment inherent in the UN system as opposed to the relative security and greater incentives offered by the bilateral programmes.

- particularly for the longer-term missions (one-year duration or more) the time lapse of 3 to 5 months between application for a post and the communication of the outcome (following receipt of the requesting Government's decision) proved discouraging and a number of candidates subsequently withdrew their applications. Those who were selected and still available, required a preparation period of some two to four months from the receipt of formal offer to entry on duty.

During the year under report, prospection was carried out for 378 posts (against 248 in 1976) — a total of 452 prospection actions. (In fact, activity was under way on a total of 433 posts, 65 of which were either indefinitely shelved or cancelled as a result of the UNDP financial constraints.) For 42 posts further prospection was found necessary (61 readvertisements, 15 posts being readvertised more than once in 1977), as the original prospection, commenced in 1977 and previous years, had not brought forth the required expertise. In addition, for 120 of these posts, a roster search was made to identify suitable candidates either in lieu of advertisement in very urgent cases, or as an additional measure. Eighty-three missions were successfully filled in this manner in 1977.

Field vacancy notices continued to be sent to more than 400 different addresses (administrations, UNDP field offices, national committees on technical assistance, operating agencies participating in the work of the Union, diplomatic missions in Geneva and some professional institutions, etc.) and were followed up by special contacts whenever necessary.

A total of 1,123 (1,071 in 1976) candidatures were examined by the Union for 340 (164 in 1976) posts for which date limits were reached during 1977. Only 548 (512 in 1976) of these candidates were retained in the short lists sent to the Governments concerned.

The greater part of the 1,123 candidatures examined by the Union in 1977 were presented by the following countries:

| | | | |
|-------------------------------|-----|-------------|----|
| United Kingdom | 337 | New Zealand | 26 |
| India | 182 | Canada | 21 |
| Sweden | 68 | Netherlands | 21 |
| France | 63 | Japan | 20 |
| Germany (Federal Republic of) | 37 | Finland | 18 |
| Ireland | 37 | Australia | 13 |
| United States of America | 30 | Bangladesh | 13 |
| Switzerland | 29 | Sri Lanka | 13 |
| Italy | 27 | U.S.S.R. | 13 |
| Norway | 27 | Egypt | 12 |
| | | Pakistan | 11 |

The remaining 105 candidates were nationals of 29 Member countries. In 1977, 279 of the 1,123 candidatures were examined for more than one post.

6.4.2 Associate expert scheme

On the basis of agreements for the provision of associate experts concluded between the Union and the Governments of Germany (Federal Republic of), Denmark, Finland, Japan, the Netherlands, Norway and Sweden, 41 associate experts (10 from Germany (Federal Republic of), nine from Denmark, one from Finland, two from Japan, 12 from the Netherlands, and seven from Sweden) served on the Union's projects in 1977. In addition, 1 associate expert, provided by the Government of France on the basis of an exchange of letters, continued his mission in 1977. All the associate experts, except one, who executed a technical mission in the Sudan, were engaged in the training of local staff at the Union's training centre projects in Afghanistan (4), Algeria (1), Argentina (1), Bangladesh (1), Botswana (1), East Africa Regional (3 in Kenya and 1 in Tanzania), El Salvador — INCATEL Regional (1), Jamaica (3), Jordan (2), Lesotho (1), Malawi (4), Morocco (1), Nepal (3), Papua New Guinea (3), Singapore (1), Somalia (1), Yemen Arab Republic (2), Zambia (3), South Pacific Regional (1 stationed in Fiji), and the Inter-regional curriculum development project (CODEVTEL) (3 stationed in Cameroon, Kenya and Singapore respectively).

During the year under report two associate experts (from Germany (Federal Republic of)) were nominated to full expert posts.

The services rendered by the associate experts continued to be extremely beneficial to the Union's projects.

6.4.3 *Volunteers*

During 1977, the Union benefited from the services of nine volunteers under the United Nations Volunteer Programme (UNV).

These volunteers were assigned to the following projects: one at the High Institute of Telecommunications in Iran, one at the Telecommunications and Electronics Training Centre in Jamaica, one at the Telecommunication Training College in Papua New Guinea, one at the Swaziland Industrial Training Institute in M'Babane, one at the Telecommunications school in Chad and four at the National Telecommunications Institute in Somalia. All are graduates of universities or technical colleges.

In addition three bilateral volunteers provided by the Governments of Germany (Federal Republic of) (2) and Japan (1) served at the Telecommunication Training Centre in Nepal.

6.4.4 *Administrative support personnel*

During the year under report, 63 administrative support personnel (administrative assistants, secretaries and drivers) were employed at ITU projects in 25 different countries. Of these, 55 were engaged at UNDP/ITU projects and eight at a project financed under Trust Fund arrangements.

6.4.5 *Fellowships*

During 1977, the Union dealt with 423 fellows who commenced, continued or completed their study programme abroad in one or more host countries.

The geographical distribution of the fellowship holders, who realized 992 man-months of training (excluding short-term awards), was the following:

| | | |
|-------------|-----|--------|
| Africa | 170 | 40,40% |
| Americas | 72 | 17,00% |
| Asia | 91 | 21,60% |
| Europe | 13 | 3,00% |
| Middle East | 77 | 18,00% |

These figures comprises:

- 1) 310 fellowships awarded under the UNDP, including short-term awards to participants in:
 - a training seminar in Cesme (Turkey) from 7 to 18 November 1977 in which 25 fellows participated.
 - a training seminar (CODEVTEL) held in Singapore from 24 January to 4 February 1977 in which 14 fellows participated.
 - a training seminar (CODEVTEL) held in Dakar from 18 to 29 April 1977 in which 15 fellows participated.
 - a training seminar (CODEVTEL) organized in El Salvador from 16 to 26 May 1977 in which 1 fellowship was awarded.
 - a technical meeting on "Outside Plant", within the framework of a project concerning the Central African Economic and Custom Union (CAECU), organized in Gabon from 10 to 25 October 1977 for which 4 fellowships were awarded.
 - a technical meeting (PANAFTEL) organized in the United Republic of Cameroon from 6 to 7 October for which 3 fellowships were awarded.

- a seminar on Maritime radiocommunications held in Buenos Aires from 17 to 28 October 1977 in which 33 fellowship holders participated.
 - a technical meeting in St. Lucia held from 16 to 20 May 1977 for which 9 fellowships were awarded.
 - a technical meeting on training organized in the Seychelles Islands, for which 1 fellowship was awarded.
- 2) 29 fellowships awarded under Trust Funds schemes.
 - 3) 4 fellowships administered by ITU but financed by Belgium as a contribution to the "Special Fund for Technical Assistance".
 - 4) A seminar on Electronic Switching held in Saudi Arabia from 1 to 27 October 1977 for which 24 fellowships (financed by the Saudi Arabian Government) were awarded.
 - 5) 21 fellowships financed by the Arab Fund for Social and Economic Development (AFESD) to participants in:
 - a) a Seminar on Signalling techniques held in Jordan from 24 to 29 September 1977.
 - b) a Seminar on International Tariffs also held in Jordan from 1 to 6 October 1977.

The Fellowships implemented in 1977 may be grouped as follows:

| | |
|---|-----|
| <i>Standard fellowships</i> | 235 |
| (Awards requiring the organization of individual study programmes as opposed to participation in group training, seminars, workshops or attending full-time courses at a UNDP/ITU training centre) | |
| <i>Fellowships awarded to Namibian nationals</i> (whose candidatures were submitted by the South West Africa People's Organization) for training at the UNDP/ITU assisted P.T. Staff Training College in N'Dola, Zambia | 35 |
| <i>Group Training</i> | 153 |

In 1977 the Union was able to implement 270 fellowships thanks to the cooperation of the administrations of the host countries. Most fellows received training in more than one country.

The principal host countries were:

| | | | |
|----------------|----|-----------|----|
| United Kingdom | 72 | Japan | 19 |
| France | 46 | Italy | 19 |
| Germany | | U.S.A. | 14 |
| (Fed. Rep. of) | 22 | Fiji | 13 |
| Singapore | 20 | Senegal | 13 |
| Switzerland | 19 | Australia | 11 |

Programmes were also organized in other industrialized and developing countries:

Algeria, Austria, Belgium, Brazil, Canada, Costa Rica, Denmark, Egypt, the United Arab Emirates, Spain, Ethiopia, Guatemala, India, Indonesia, Ireland, Kuwait, Liechtenstein, Madagascar, Malaysia, Morocco, New Zealand, Norway, Netherlands, Portugal, Sudan, Thailand, Tunisia and Venezuela.

Furthermore programmes were arranged for 5 fellows at ITU Headquarters.

6.4.6 Seminars

Within the framework of the ITU/UNDP Feasibility Study/Preinvestment Survey for the Middle East Telecommunications Network, two seminars were organized by the ITU, in collaboration with the Arab Telecommunication Union. Financial support was provided by the Arab Fund for Economic and Social Development (AFESD) and both seminars were held in Amman (Jordan), the first - on signalling systems - from 24 to 29 September and the second - on international tariffs - from 1 to 6 October. The Government of Jordan provided the physical facilities required for the seminars.

The seminar on signalling was attended by 23 participants from ten countries of the region, and lecturers were provided by the Federal Republic of Germany, the United States, France and Sweden at the expense of their respective Administrations. Four officials from the Union's Headquarters also gave lectures.

Twenty-nine officials from 12 countries participated in the seminar on tariffs and lecturers were provided by France, Italy, the United Kingdom and the Arab Telecommunication Union (ATU) at no cost to the Union. Three officials from Headquarters also gave lectures.

Within the framework of regional projects financed by UNDP, the Union organized, in cooperation with the Argentinian Administration, a seminar on the development of maritime radiocommunications which was held in Buenos Aires from 17 to 28 October 1977. It was attended by 58 participants from the countries of the region, 43 of whom received UNDP/ITU fellowships. The lectures were given by 8 Argentinian officials and 10 other specialists from several Administrations or Organizations.

The third in a series of inter-regional seminars on training was held in Cesme (Turkey) from 7 to 18 November, the theme being standards for training of staff engaged in teaching in the field of telecommunications. As well as providing the physical facilities, the Turkish Government kindly contributed the equivalent of \$ 5,500 towards the cost of translation services during the seminar. Seventy-three participants from 39 countries took part, mostly at the expense of their Administrations. Papers were presented by participants from the following countries: Canada, Costa Rica, France, India, Italy, Kenya, Kuwait, the United Kingdom and Sweden and by Union staff members (see also 6.9).

Furthermore, with the financial assistance of Kuwait a three-day seminar on maritime radiocommunications was organized in March 1977 by the Union. Five countries took part, i.e. Kuwait, Bahrain, Qatar, Saudi Arabia and the United Arab Emirates. Twenty-five participants attended the seminar at the expense of their respective administrations.

6.4.7 *Procurement of equipment*

In the course of 1977, equipment was ordered from suppliers in:

| | |
|---|------------------|
| Germany (Federal Republic of) | \$ 1,219,186 |
| Argentina | 750 |
| Australia | 239,451 |
| Austria | 8,754 |
| Belgium | 21,147 |
| Bolivia | 2,000 |
| Canada | 19,477 |
| Denmark | 35,445 |
| Spain | 28,200 |
| United States of America | 1,016,458 |
| Fiji | 3,748 |
| France | 136,771 |
| Guinea | 500 |
| Hong-Kong | 833 |
| Italy | 139,678 |
| Japan | 349,638 |
| Jordan | 6,553 |
| Morocco | 70 |
| Nigeria | 3,065 |
| New Zealand | 13,750 |
| Netherlands | 119,325 |
| United Kingdom | 991,483 |
| Singapore | 2,741 |
| Somalia | 700 |
| Sweden | 293,774 |
| Switzerland | 424,974 |
| U.S.S.R. | 105,314 |
| Total | <u>5,183,785</u> |

The equipment ordered (5,183,785 US dollars), represents a 63 per cent increase compared with the total for 1976 (3,296,710 US dollars).

The value of equipment delivered during 1977 to field projects was 3,801,375 US dollars against 4,812,153 US dollars in 1976. This figure also includes equipment ordered in 1976 or before but not delivered until 1977. As at 31 December 1977, the value of purchase orders still pending amounted to 2,378,310 US dollars and the Union has received new requisitions of the order of 865,000 US dollars. In 1977, the Union dealt with the procurement of equipment for 68 projects, 9 of which were multinational.

Field experts and UNDP Resident Representatives concerned were kept constantly informed by the Union of the status of equipment procurement.

The table (page 74) gives details of the equipment ordered and delivered in the course of 1977, listed by country of destination.

6.4.8 *Sub-contracting*

During 1977, the Union entered into four new contracts. Field activities continued to be carried out under five contracts. Seven companies were involved. Five projects under UNDP and two under Trust Funds arrangements were concerned with subcontracting (See Annex 6, Table 2).

6.5 *Preparation of new projects*

A large volume of work was executed by the Union's Headquarters staff, in preparation for the UNDP second programming cycle for the period 1977-81. During 1977, the Union was in continuous contact with the Administrations and UNDP Resident Representatives in developing countries in order to assist them in determining the minimum inputs required for the smooth continuation of existing projects and in preparing the UNDP/ITU programme of assistance over the second cycle. The assistance continuously provided over the last few years in the identification and formulation of telecommunication projects has certainly led to increased recognition of the importance of this sector in many countries. However, owing to the priority given to on-going projects within the limited resources available to UNDP, most of the new projects may only be expected to start in 1978 or later.

The following represents a list of selected important projects proposed to the UNDP, the countries concerned and other financing bodies for implementation in 1978 and years to come:

Africa

- Telecommunications Institute (Phase II), Algeria,
- Training of "Ingénieurs d'Etat" in telecommunications, Algeria,
- Telecommunication Training Centre, Angola,
- Planning of national telecommunication networks, Rwanda,
- Implementation of development plan, Guinea-Bissau,
- Planning of local network, Guinea,
- P & T Training Centre, Oshodi (Second Phase), Nigeria,
- Development Plan (Second Phase), Nigeria,
- Rural Development, Gambia,
- Planning of telecommunication development, Zaire,
- Participation in National Network Planning, Egypt,
- Assistance in Maintenance of Local Network, Egypt,
- Implementation of PANAFTEL (Pan African Telecommunication Network) - Extension of activities - Regional project,
- Pre-investment survey of national and inter-country links - Regional project.

Equipment Delivered and Ordered in 1977
(in US dollars)

| Projects carried out in the following countries/regions | Equipment delivered | Equipment ordered |
|--|------------------------|-----------------------|
| Afghanistan | 80,512 | 123,393 |
| Algeria | 20,598 | 7,358 |
| Saudi Arabia ⁽¹⁾ | 889,513 | 1,353,420 |
| Argentina | 9,791 | 45,781 |
| Bangladesh | 245,485 | 220,627 |
| Burma | 57,847 | 106,842 |
| Bolivia | 54,480 ⁽²⁾ | 25,062 ⁽²⁾ |
| Brazil | 62,169 | 50,519 |
| Cameroon | 312 | — |
| Cape Verde ⁽³⁾ | 3,887 | 1,800 |
| Chile | 2,026 | 3,551 |
| Colombia | 114,863 | 148,553 |
| Cuba | 424,605 | 405,263 |
| Egypt | (938) | — |
| El Salvador ⁽⁴⁾ | 31,726 | 46,226 |
| Ecuador | 18,132 | 40,003 |
| Fiji ⁽⁶⁾ | 54,512 | 82,802 |
| Gambia | 8,196 ⁽⁷⁾ | 8,196 ⁽⁷⁾ |
| Guinea | 8,768 | 56,263 |
| Guinea-Bissau ⁽⁸⁾ | 8,662 ⁽⁸⁾ | 1,647 |
| Equatorial Guinea | 44,715 | 401,535 |
| Guyana | 79,472 | 99,884 |
| India | 322,405 | 298,443 |
| Indonesia | 22,915 | 38,781 |
| Iran | 435 | — |
| Iraq ⁽⁹⁾ | 1,298 | 1,298 |
| Jamaica | 21,782 | 43,552 |
| Jordan | 123,998 | 163,060 |
| Kenya ⁽¹⁰⁾ | 2,892 | 1,587 |
| Kuwait ⁽¹¹⁾ | 206,595 | 150,883 |
| Lesotho ⁽¹²⁾ | 727 | — |
| Malawi ⁽¹³⁾ | 43,323 | 63,144 |
| Maldives | 459 | — |
| Morocco | 144,235 | 96,594 |
| Mauritania | (6) | 3,694 |
| Mongolia | — | 110,300 |
| Nepal | 101,609 | 190,691 |
| Niger | 3,214 | 3,994 |
| Nigeria | 111,199 | 95,894 |
| Pakistan | 21,631 | 25,007 |
| Papua New Guinea | 111,175 | 181,145 |
| Rwanda | 39,688 | 84,673 |
| Western Samoa | 547 | — |
| Senegal ⁽¹⁴⁾ | (1,520) | — |
| Somalia ⁽¹⁵⁾ | 73,654 | 148,794 |
| Sudan | 11,382 | 8,632 |
| Chad | 2,694 | 2,514 |
| Trinidad and Tobago | 44,165 | 21,715 |
| Tunisia | 159,380 | 205,040 |
| Yemen Arab Republic | 1,573 | 1,673 |
| Zambia | 93 | — |
| Project: RAF-73-023 ⁽¹⁶⁾ | 21 | 21 |
| Project: CAR-75-002 ⁽¹⁷⁾ | 286 | 286 |
| Project: REM-75-027 ⁽¹⁸⁾ | 1,423 | 1,548 |
| Project: RLA-74-023 ⁽¹⁹⁾ | 1,372 | 3,592 |
| Project: RLA-74-028 ⁽²⁰⁾ | 431 | 431 |
| Project: INT-74-017 ⁽²¹⁾ | 6,967 | 8,074 |
| | 3,801,375 | 5,183,785 |

- (1) Projects financed by Trust Funds.
- (2) Includes 31,726 US dollars of equipment delivered and 21,631 US dollars of equipment ordered under the terms of projects financed by Trust Funds.
- (3) Project financed by the ITU Special Fund for Technical Cooperation.
- (4) Multinational project: Costa Rica, El Salvador, Guatemala, Nicaragua.
- (5) Not used.
- (6) Multinational project: Cook Islands, Fiji, Gilbert Islands, Ellis Islands, Solomon Islands, Tonga.
- (7) Includes 729 US dollars of equipment ordered and delivered under the terms of a Trust Funds financed project.
- (8) Includes 3,931 US dollars of equipment delivered under the ITU Special Fund for Technical Cooperation.
- (9) Project financed by Trust Funds.
- (10) Multinational project: Kenya, Uganda, Tanzania.
- (11) Projects financed by Trust Funds.
- (12) Financed out of the ITU Special Fund for Technical Cooperation.
- (13) Multinational project: Botswana, Lesotho, Malawi, Swaziland.
- (14) Multinational project: Benin, Ivory Coast, Central African Empire, Upper Volta, Mali, Mauritania, Niger, Senegal, Togo.
- (15) Includes 20,153 US dollars of equipment delivered and 38,933 US dollars of equipment ordered under the terms of a Trust Fund Project.
- (16) Regional project: implementation of the Pan-african telecommunication network.
- (17) Multinational project for the Caribbean.
- (18) Regional project: Feasibility study/preinvestment survey for the Middle East telecommunication network.
- (19) Regional project: telecommunication integration and development in Latin America.
- (20) Regional project: Radio frequency management, infrastructure and follow-up in Latin America.
- (21) Interregional project: Curriculum development in telecommunication training (CODEVTEL).

The Americas

- Automatic message transmission system, Argentina,
- Pilot centre for radio frequency monitoring, Argentina,
- National Training Centre, Haiti,
- Assistance to Trinidad & Tobago Telephone Company Ltd.,
- National Training Centre, Guatemala,
- National Training Centre, Honduras,
- Strengthening of ANTEL organization and management, El Salvador,
- National Training Centre (Second Phase), Ecuador,
- National Training Centre (Second Phase), Peru,
- National Training Centre (Second Phase), Bolivia,
- Assistance in outside plant, organization and management, Belize,
- Consultancy services to TELCOR in electronic switching, Nicaragua,
- Regional project of assistance to CITEC for technical studies on the development of telecommunications at regional level,
- Regional project on the development of data communications in Latin America – Regional project.

Asia and the Pacific

- Telecommunication Test and Development Centre, Korea,
- Feasibility studies on network development, South Pacific,
- Regional Training Centre, South Pacific,
- Implementation of the Asian Telecommunication Network – Regional project,

- Telecommunication Planning, Afghanistan,
- Development of Sound and Television Broadcasting, Bangladesh,
- Establishment of a Telecommunication Staff College and Regional Telecommunication Training Centres, Bangladesh,
- Addition of Training Development Centre to the Advanced Level Telecommunication Training Centre, Ghaziabad (India),
- Development of satellite communication capabilities at frequencies above 10 GHz and augmentation of training facilities at the Space Applications Centre, Ahmedabad (India),
- Expansion of radio frequency monitoring facilities, including communication satellite monitoring, and augmentation of time and frequency services (India),
- Telecommunication Links to Remote Areas (Pakistan),
- Expansion and establishment of Regional Telecommunication Training Centres, Pakistan.

Europe and the Middle East

- Assistance in development of a Research Centre for Telecommunications, Bulgaria,
- Establishment of Telecommunications Centre, Lebanon,
- National Telecommunication Network Survey, People's Democratic Republic of Yemen,
- Manpower – Training Survey, People's Democratic Republic of Yemen,
- Establishment of a modern Training Centre, Portugal,
- Advisers for the Ministries of PTT and Information, Saudi Arabia,
- Establishment of regional Training Centres, Turkey,
- Telecommunications Training Centre, Yemen Arab Republic,
- Technical appraisal of Planned Troposcatter Systems, Yemen Arab Republic,
- Organisation and Administration of Telecommunications (Phase II), Yemen Arab Republic,
- Arab Regional Telecommunication Institute – Regional project,
- Telecommunication Training Centre (Phase III), Iraq.

6.6 Financial constraints of the UNDP and their repercussions

The Union's technical cooperation activities suffered much from the reductions and cutbacks in the programmes/projects financed by the UNDP in 1977. Thus the sum made available by the UNDP to the Union in the course of the last year was 28.2 per cent lower than in 1976 (12,315,388 US dollars in 1977 as against 17,170,471 US dollars in 1976). The highest reductions occurred in the Europe/Middle East programme (about 42.4 per cent) while the lowest were in Asia and the Pacific (about 16.7 per cent). Countries in Africa and the Americas received, money-wise, less assistance; 28.3 and 30.1 per cent respectively, as compared with the preceding year's programme.

The UNDP financial constraints had also very serious negative effects in real terms. Thus the number of man/months of services provided by experts under UNDP dropped from 2578 in 1976 to 1890 in 1977 (–26.6 per cent). A further indication of this phenomenon is the fact that the number of projects assigned to the Union by the UNDP fell from 192 in 1976 to 126 in 1977 (–34 per cent).

The non-availability of the necessary funds also affected the volume of other inputs provided by the Union to developing countries such as fellowships, seminars and equipment. The considerable amount of cooperation carried out in 1977 by the Union under Trust Funds arrangements did not compensate for

cutbacks under the UNDP. However several countries situated in the Middle East were in a position to maintain the Union's technical cooperation activities at the 1976, level in dollars terms, by doubling their Trust Funds contribution.

The beginning of the second programming cycle of the UNDP (1977-1981) coincided with an improvement of the UNDP financial situation and the Union's very serious and concerted actions with the Administrations, Resident Representatives and the UNDP Headquarters regarding its participation in development work. The results obtained so far may be considered as promising and it is expected that the years to come will allow the Union to render more and better aid to the developing world.

6.7 Activities under Resolution No. 17 of the Plenipotentiary Conference (Malaga-Torremolinos, 1973)

In 1977 the Group of Engineers responded to requests for specialized assistance in indicated fields from the following Administrations:

| | |
|--------------------------------------|---|
| Saudi Arabia | <ul style="list-style-type: none"> - advice on specifications for a telephone exchange project - tender evaluation for a telephone exchange project - specifications for maritime mobile service |
| Botswana | <ul style="list-style-type: none"> - telephone network planning |
| Comoros Islands | <ul style="list-style-type: none"> - maintenance of transmission systems |
| Costa Rica | <ul style="list-style-type: none"> - electronic switching |
| Cyprus | <ul style="list-style-type: none"> - viability study of satellite earth station |
| Ecuador | <ul style="list-style-type: none"> - advice on aspects of electronic switching |
| Ghana | <ul style="list-style-type: none"> - tender evaluation concerning a satellite earth station and international switching centre |
| Guinea | <ul style="list-style-type: none"> - earth station planning and specifications |
| Haiti | <ul style="list-style-type: none"> - acceptance test of a satellite earth station |
| Mauritania | <ul style="list-style-type: none"> - tender evaluation for a satellite earth station, a domestic satellite system, a telephone switching project and local network equipment |
| Morocco | <ul style="list-style-type: none"> - preliminary study on maintenance organization |
| Sao Tome and Principe | <ul style="list-style-type: none"> - management and statistics |
| Senegal | <ul style="list-style-type: none"> - preliminary study for a training centre for higher level training - introduction of R2-signalling in the telephone network |
| Surinam | <ul style="list-style-type: none"> - specifications for a telephone switching project |
| Swaziland | <ul style="list-style-type: none"> - tender evaluation for a microwave project |
| Thailand | <ul style="list-style-type: none"> - radio frequency management and monitoring |
| Yemen Arab Republic | <ul style="list-style-type: none"> - telephone switching project |
| Yemen (People's Democratic Republic) | <ul style="list-style-type: none"> - frequency management - telephone switching project |

In all cases it was necessary to undertake short missions to these countries in order to deal with the subjects concerned in an adequate way.

During 1977, it proved necessary to recruit 14 outside specialists in order to provide the required assistance to the Administrations.

The members of the Group of Engineers participated in the following seminars:

| | |
|--------|---|
| Jordan | <ul style="list-style-type: none"> - signalling and switching - international tariffs |
| Kuwait | <ul style="list-style-type: none"> - maritime radiocommunications |

Upon the request of the Secretary-General, special missions were made to the following countries for the reasons indicated below:

| | |
|-------------------------------------|--|
| Canada, France and United States | – discussions concerning development of strategies and coordination for a global project on integrated rural development which would quantify benefits from telecommunications in the development process. |
| Italy | – FAO telecommunication facilities |
| Roumania | – evaluation of telecommunication equipment requirements following the earthquake |
| United Kingdom | – discussions concerning the set-up of the electronic switching course held in Jeddah, Saudi Arabia. |

As in previous years, members of the Group of Engineers were frequently consulted by staff of Telecommunication Administrations visiting Geneva. A large amount of the time of the members of the Group of Engineers was spent in activities related to requests by Administrations for advice or short-term assistance. Close contacts were maintained with the CCITT, CCIR and IFRB on technical matters related to requests from Administrations.

A total of Swiss Francs 234 889 were disbursed in application of Resolution No. 17, out of the ordinary budget of the Union.

6.8 Application of Resolution 19 of the Plenipotentiary Conference (Malaga-Torremolinos, 1973) – Special measures for the Least Developed Countries

Reporting on the activities undertaken by the Union in application of the above-mentioned Resolution is limited to those activities financed from the UNDP Special Fund for the Least Developed Countries (LDC). This Section does not cover any of the UNDP/ITU projects financed from Indicative Planning Figures of the least developed countries.

The following assistance provided by the Union in 1977 falls under this category:

- the services of four experts for a total of 19.5 months to advise the Ministry of Communications in Afghanistan on the planning of transmission systems and long-distance telephone switching networks, telecommunication legislation and frequency management;
- the services of an expert for one month as adviser to the Director of Posts and Telecommunications in Botswana. This project terminated in early February 1977;
- the services of five experts for a total of 39 months and the purchase of US dollars 245 485 of equipment for the Telecommunication Training Centre in Dacca, Bangladesh;
- the construction of new premises for the Telecommunication Training School in Chad which will be opened in 1978.

In 1977 the Union disbursed US dollars 872 343 for assistance in the telecommunication field for the above listed least developed countries. The assistance provided by the Union (under the UNDP Special Fund for the Least Developed Countries) during the year under report represents 7 per cent of total field expenditures of the Union.

It is worthwhile mentioning that under Resolutions 17 and 21 (Malaga-Torremolinos, 1973) the Union provided assistance to ten least developed countries. Sections 6.7 and 6.10 refer.

Note: The Least Developed Countries (LDC), as designated by the United Nations, are as follows:

Africa: Benin, Botswana, Burundi, Central African Empire, Ethiopia, Gambia, Guinea, Upper Volta, Lesotho, Malawi, Mali, Niger, Uganda, Rwanda, Somalia, Sudan, Tanzania, Chad.

Latin America: Haiti.

Asia and the Pacific: Afghanistan, Bangladesh, Bhutan, Laos, Maldives, Nepal, Western Samoa.

The Middle East: Yemen Arab Republic, People's Democratic Republic of Yemen.

During its 1976 session, the General Assembly of the United Nations decided that "special measures" should be applied to four more countries in Africa: namely, Angola, Cape Verde, Comoros and Sao Tome and Principe.

6.9 Activities under Resolution No. 23 of the Plenipotentiary Conference (Malaga-Torremolinos, 1973) – Training Standards

The UNDP/ITU interregional project on Course Development in the field of Telecommunications (CODEVTEL) continued its activities throughout the year and made good progress toward achieving its objectives. Thus the production of "Training Development Guidelines", which explain the approach adopted for course development has now largely been completed in draft form. The draft will be reviewed in 1978 by a small group of training specialists from Administrations before publication.

Good progress has also been made in the production of course material (training packages) by the seven training centres (Caracas, Nairobi, Oran, Rufisque, San Salvador, Singapore and Yaoundé) participating in the project. Most of the training packages are currently being validated (tested on trainees at the originating centre and revised where necessary in the light of the results) and at least one is already being adapted for use at another participating centre.

Three seminars on training development (Dakar, San Salvador and Singapore – one in each of the working languages of the Union) were held early in 1977 in order to consult as many Member Administrations as possible about their training needs, to ensure acceptance of the material being produced, to introduce modern training methodology and to explore the interest in international cooperation in training development. Altogether, 186 participants from 57 countries attended the seminars, mostly at the expense of their Administrations.

Before each seminar, a training needs survey was carried out in the countries concerned with particular reference to the specialities covered by the project.

The Coordinating Unit of the CODEVTEL project, in collaboration with the Training Division, organized in March/June 1977 the second parts of the two workshops for course developers from the French Telecommunications Administration.

A number of other administrations have officially requested assistance from the project and this was provided to the extent that resources permitted. For example, two "mini-workshops" in course development in India plus assistance in project formulation; assistance to Kuwait in adapting a course; one-week workshop in Algeria.

Assistance in kind to the CODEVTEL project was obtained during the year from France and Switzerland in the form of two missions by telecommunication specialists. In addition three associate experts were provided by the Governments of France, the Netherlands and Sweden.

In September 1977, a mid-term review of the CODEVTEL project was made by a joint UNDP/ITU mission, which concluded that "The project is potentially of great importance in contributing to a worldwide improvement in the quality and efficiency of telecommunication training" and that "Design and implementation methodology of the project are well-founded and the project is making satisfactory progress ... although ... some additional resources to those currently available will have to be provided and some additional time will be necessary". It is expected that a second phase of the project will be approved by the UNDP in the course of 1978.

During the year under review, the Training Division began drafting the Reference Manual for the design and operation of training establishment. Chapter 4 (Training) was circulated for comments while Chapter 2 (Physical requirements) is partially completed. It is hoped that the entire Manual will be prepared in draft form by the end of 1978.

A seminar on standards for training of staff engaged in teaching in the field of telecommunications was held in Cesme (Turkey) from 7 to 18 November 1977. This was the third in a series of inter-regional seminars on different aspects of training and was attended by 73 participants from 39 countries.

The programme included 24 lectures on subjects related to training of trainers. Demonstrations of the use of closed-circuit television in training were also given. Within monolingual working groups the participants examined several case studies and questions relating to the functions of training personnel.

Using as a starting point a list of tasks in the field of training drawn up by the Working Group on Training Standards, the participants formulated a list of key tasks related to the training function and attributed these tasks according to a list of seven classes of training personnel. They also defined methods of evaluating the training of trainers and made recommendations for establishing and maintaining positive instructor motivation.

It was recommended that the main theme of the next training seminar be the management of training; this next seminar could be held in late 1979 or early 1980.

The instructor-training workshop prepared by the Training Division was administered to a group of training personnel from the Portuguese Administration and several requests have been received for the workshop to be given in other countries. A great deal of training material (handouts, transparencies, etc.) was produced for the workshop, in French and English.

An addendum to the catalogue of training documentation on hand at the Union was disseminated early in the year. Coding of new material continued, together with microfilming of selected items.

The Union continued to inform Member Administrations of courses likely to be of interest, especially to the developing countries.

The Training Division also continued to brief experts on its activities and on the Union's overall training policy. These briefings sometimes included demonstrations of new types of training aids and for this purpose some additions were made to the "training laboratory".

In addition to missions in connection with the seminars and workshops mentioned above, professional staff of the Training Division visited Greece, Oman and Zaire in order to advise on training problems. One official of this Division assisted in the organization of an instructor-training course in India. The Division was also represented at international conferences and meetings on training held in Switzerland and Italy and participated in an exhibition of software connected with the latter.

6.10 Application of Resolution 21 of the Plenipotentiary Conference (Malaga-Torremolinos, 1973) – Special Fund for Technical Cooperation

During the year under report the following Administrations/Governments made cash contributions to the Fund:

| | |
|-------------|-----------------------------|
| Burma | 55,900 Swiss Francs |
| Iran | 24,779 " " |
| Norway | 12,507 " " |
| Sweden | 78,895 " " |
| Netherlands | <u>14,016</u> " " |
| Total | <u>186,097</u> Swiss Francs |

In 1977, Guinea-Bissau, Cape Verde and Lesotho received small quantities of emergency repair and training equipment (8129, 8434 and 1577 Swiss Francs respectively). Two participants from Rumania received stipends amounting to 2161 Swiss Francs. Furthermore, out of the Fund the following short-term expert missions were financed:

- Comoros (State of): Maintenance of HF radio equipment for fixed services;
- Mauritania: Earth station communication and radio relay, and - Telephone switching and local networks;
- Tanzania: International traffic accounting;
- Haiti: Satellite communications;
- Yemen (Arab Republic): Network planning - TV and sound broadcasting transmission.

At the end of 1977 liquid assets of the Fund totalled 143 870 Swiss Francs.

Note should also be taken that Belgium granted four fellowships as their contribution in kind to the Special Fund. Furthermore, following the earthquake in Rumania in 1977, the Administrations of Austria, Belgium and France offered assistance to this country in equipment (total 6700 telephone sets and 160 teleprinters).

6.11 Application of Resolution 798 of the Administrative Council - Operational Fund

Due to financial difficulties, the UNDP reduced the funding of the Union's regional experts from eight in 1976 to one in 1977. The lack of this type of expertise at the field level and the problem of the Union's sectoral support became a matter of great concern. During its session in 1977, the Administrative Council deliberated on this question and instructed the Secretary-General to undertake specific paliative measures pending the review of UNDP possibilities to finance regional expertise in the years to come. At the same time, the Council established, by its Resolution 798, an Operation Fund to which various miscellaneous incomes are credited. Out of this Fund and following the promises made by the UNDP concerning the financing of three regional expert posts in Asia and one such post in Latin America with the CITEI, the Secretary-General appointed two regional experts, financed out of the Operational Fund, from July 1977 located in Brasilia and Bangkok respectively.

Only at the beginning of 1978 was the UNDP in a position to review its policy concerning possible financing of the Union's regional expert in Africa and to make positive conclusions in this respect. Consequently, during the second semester of 1977, four engineers from the Technical Cooperation Department carried out missions to Tunisia, Guinea-Bissau, Niger, Rwanda, Burundi, Zaire, Tanzania and Ethiopia. These short-term missions, financed out of the Operational Fund, were executed by regional experts.

The total disbursement in the course of the year paid from the Operational Fund amounted to 121,001 Swiss Francs. At 31 December 1977, the Operational Fund stood at 103,390 Swiss Francs.

7. ADMINISTRATION OF THE UNION

7.1 Staff matters

7.1.1 On 31 December 1977 the staff of the various organs of the Union, excluding staff on short-term contracts, was distributed as shown in the following table (for purposes of comparison the figures for the end of 1976 are given in parentheses).

TABLE 1

Distribution of staff (excluding staff on short-term contracts) between the organs of the Union

| Organ | Elected officials | Number of contracts | | Total |
|---------------------------|-------------------|---------------------|------------|-----------|
| | | Permanent | Fixed-term | |
| General Secretariat | 2 | 343 | 53 | 398 |
| IFRB | 5 | 95 | 3 | 103 |
| CCITT | 1 | 40 | 1 | 42 |
| CCIR | 1 | 27 | 1 | 29 |
| Total | 9 | 505 (517) | 58 (63) | 572 (589) |

7.1.2 The manning table in the 1977 budget comprised 616 posts, 587 of them permanent. The following changes occurred during the year among staff with permanent or fixed-term contracts: 11 retirements, 3 departures on end of contract, 14 resignations or transfers, and 1 death. Nine officials worked part time.

7.1.3 The size of the Union staff is such that it must be supplemented or reinforced when the volume of work increases temporarily, when regular staff is not available or when jobs have to be done for which the corresponding posts do not exist: 1) Conferences and meetings¹ obviously account for the major proportion of temporary staff, whether they are language staff, staff to carry out all the operations connected with document production and distribution, simultaneous interpretation equipment operators, and so on. 2) A temporary increase in urgent work — for example, a service document which has to be published by a certain date or computer programmes that have to be transcribed — must be absorbed by short-term staff. 3) Sometimes it is more economical to supplement frequently, but on a short-term basis, the staff of a section working in shifts (telephonists) rather than to increase the permanent staff or to incur the high cost of overtime. 4) It has not yet been possible to create permanent posts in every case where the duties performed are of a permanent nature. 5) While the duties of staff who are temporarily absent (on prolonged sick or maternity leave, for example) are usually shared by colleagues, temporary assistance is sometimes essential. 6) When a permanent post falls vacant, it may be necessary to recruit someone for a short period until the post is filled.

The assignment of short-term staff in 1977 is shown in the table below. When comparison with the number of established posts is possible (which is not always the case because the pertinent duties either are not covered by established posts or are divided among a number of sections — as is the case for secretaries or clerical assistants — whereas only one section is supplemented), the corresponding figure is shown in parentheses after the title of the post.

¹ For 1977: 32nd Session of the Administrative Council — World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in the 12 GHz Band — Technical Cooperation (4 meetings) — External Relations (1 meeting) — Public Relations (1 meeting) — CCIR (Final Meetings of Study Groups 2, 4, 5, 9, 10, 11 and CMTT) — CCITT (44 meetings).

TABLE 2

Staff on short-term contracts

| | Number of contracts | Total number of working days |
|---|------------------------|---------------------------------|
| Interpreters | 308 (332) | 5,458 (6,738 1/2) |
| Engineers (—) | 1 (1) | 212 (60) |
| Analyst-programmers (12) | 1 (5) | 12 (513) |
| Translators (13), précis-writers (1), revisers (14) | 77 (86) | 3,933 (4,382 1/2) |
| Technical editors (—) | — (1) | — (270) |
| Associate administrative officers (—) | 1 (3) | 347 (210) |
| Proof-readers (—) | 13 (14) | 1,455 1/2 (1,047) |
| Calculators (—) | 2 (2) | 335 (315) |
| Photocomposition: prof. assistants (1), checkers, text assemblers, “Zentec” and “Varicomp” typists (1), “data capture” pool (8), “Photon” operators (1) | 104 (39) | 7,897 (4,744) |
| Draughtsmen/designers (1), photographers (2) | 6 (6) | 549 1/2 (390 1/2) |
| Electricians (4), electronics technicians (—), carpenters (2) | 2 (6) | 334 (746) |
| Secretaries, office assistants, bookkeepers, assistants, checkers, heads of teams | 106 (136) | 9,068 (12,250) |
| Shorthand-typists, typists, clerks | 179 (194) | 13,190 (13,196) |
| Telephone operators (3) | 20 (35) | 676 (806) |
| Offset operators (6) | 15 (14) | 1,356 (1,262) |
| Punch-card operators (10) | 3 (3) | 486 (521) |
| Duplicating machine operators (5), assemblers (7), trimmers (1) | 39 (50) | 2,810 (3,733) |
| Simultaneous interpretation equipment operators (—) | 16 (11) | 234 (263) |
| Dispatching staff (9), other document staff (6), messengers (10), night watchmen (1), reception staff (3), storemen (—) | 97 (94) | 3,589 (4,925) |
| | 990 (1032) | 51,942 (56,372 1/2) |

(In columns 2 and 3 the 1976 figures are shown in parentheses)

7.1.4 The distribution of staff according to grade in the various organs is given in Table 3. Most of the posts under the heading “General Secretariat” belong to services which, in fact, work for all the organs of the Union or are posts in the Technical Cooperation Department.

TABLE 3

Distribution of staff according to grade

| Grade | General Secretariat | | IFRB | | CCITT | | CCIR | | Total | |
|-------------------|---------------------|----|------|----|-------|----|------|----|-------|----|
| Elected officials | 2 | | 5 | | 1 | | 1 | | 9 | |
| | P | FT | P | FT | P | FT | P | FT | P | FT |
| D.1 | 7 | 1 | 2 | — | 3 | — | 3 | — | 15 | 1 |
| P.5 | 14 | 5 | 7 | — | 4 | — | 4 | — | 29 | 5 |
| P.4 | 20 | 14 | 14 | 1 | 7 | — | 3 | — | 44 | 15 |
| P.3 | 38 | 5 | 6 | — | 5 | — | 2 | 1 | 51 | 6 |
| P.2 | 14 | 2 | 9 | — | 2 | — | — | — | 25 | 2 |
| P.1 | — | — | — | — | 2 | — | — | — | 2 | — |
| G.7 | 29 | — | 6 | — | 2 | — | 5 | — | 42 | — |
| G.6 | 52 | 4 | 17 | — | 11 | — | 6 | — | 86 | 4 |
| G.5 | 67 | 6 | 15 | 1 | 3 | 1 | 3 | — | 88 | 8 |
| G.4 | 25 | 3 | 12 | — | — | — | 1 | — | 38 | 3 |
| G.3 | 51 | 8 | 7 | 1 | 1 | — | — | — | 59 | 9 |
| G.2 | 20 | 4 | — | — | — | — | — | — | 20 | 4 |
| G.1 | 6 | 1 | — | — | — | — | — | — | 6 | 1 |
| | 343 | 53 | 95 | 3 | 40 | 1 | 27 | 1 | 505 | 58 |
| Total | 398 | | 103 | | 42 | | 29 | | 572 | |

(P = Permanent; FT = Fixed-term)

Note: The above table shows the grades of staff members, those receiving a special post allowance granted upon a recommendation by the Appointment and Promotion Board being shown in the grade for which they receive the allowance.

7.1.5 The principle of geographical distribution applies to elected officials and staff in the following categories: senior counsellors, professional category (excluding language staff), and technical posts in grades G.7, G.6 and G.5. (The principle does not apply to other posts in the general service category.) The geographical distribution at the end of 1977 is shown in four tables.

Table 4 combines the data contained in the two following tables and thus shows the geographical distribution of all staff employed at ITU Headquarters; the number of nationalities represented was 44 on 31 December 1977 (for 176 officials). Table 5 concerns the staff whose salaries are paid from the ordinary budget of the Union and Table 6 concerns the Headquarters staff whose salaries are paid from the technical cooperation budget. Table 7 concerns technical cooperation experts.

TABLE 4

Geographical distribution of Headquarters staff on 31 December 1977

| Country | Elected officials | D.1 | P.5 | P.4 | P.3 | P.2 | P.1 | G.7 | G.6 | G.5 | Total |
|--|-------------------|--------|---------|---------|---------|---------|--------|-------|-------|-------|-----------|
| <i>Region A — America</i> | | | | | | | | | | | |
| Argentine Republic | | | 1 (—) | (1) | (1) | | | | | | 1 (2) |
| Brazil | | | 1 (—) | (1) | | 1 | | 1 (—) | | | 3 (2) |
| Canada | 1 | 1 (—) | | 1 | 1 (—) | (1) | (1) | | | | 4 |
| United States | 1 | 1 | 3 (1) | 4 (3) | 1 (4) | | | | | | 10 |
| Haiti | | | | 1 (—) | (1) | | | | | | 1 |
| Mexico | | | 1 (—) | (1) | | | | | | | 1 |
| Paraguay | | | 1 | | | | | | | | 1 |
| <i>Region B — Western Europe</i> | | | | | | | | | | | |
| Germany (Fed. Rep. of) | | 1 | | 2 (1) | 2 (3) | 1 | 1 | | (1) | | 7 (8) |
| Belgium | | | | | 2 (1) | 1 | | | | | 3 (2) |
| Denmark | | | | 1 | | | | | (1) | | 1 (2) |
| Spain | | | | 1 (—) | 6 (4) | 1 (2) | (2) | | | | 8 |
| France | 1 | 2 (1) | 2 | 6 (2) | 5 (7) | 6 (5) | (1) | (2) | | (1) | 22 |
| Greece | | | | | 1 | | | | | | 1 |
| Cyprus | | | | 1 (—) | (1) | | | | | | 1 |
| Italy | | | 1 (—) | 3 (2) | 2 (3) | | (1) | | | | 6 (7) |
| Norway | | | | | | | | | | (1) | — (1) |
| Netherlands | | | 1 (—) | 1 | 2 | (1) | (1) | | | | 4 (5) |
| United Kingdom | 1 | 1 (—) | 4 (3) | 3 | 4 (3) | 2 (5) | | (1) | | | 15 (16) |
| Sweden | | | 1 (—) | 1 (2) | | 1 (—) | (1) | | | | 3 |
| Switzerland | | 1 (—) | 6 (2) | 8 (7) | 12 (9) | 12 (13) | (2) | (2) | | (1) | 39 (36) |
| Turkey | | 1 (—) | (1) | | | | | | | | 1 |
| <i>Region C — Eastern Europe and Northern Asia</i> | | | | | | | | | | | |
| Bulgaria | | | | 1 (—) | (1) | | | | | | 1 |
| Hungarian People's Rep. | | | | | (1) | | | | | | — (1) |
| Poland (People's Rep. of) | | 1 | | | 1 | | | | | | 2 |
| Ukraine | | | | | 1 | | | | | | 1 |
| U.S.S.R. | 1 | 1 | 1 (—) | 2 (1) | (2) | | | | | | 5 |
| Yugoslavia | | 1 | | | | | | | | | 1 |
| <i>Region D — Africa</i> | | | | | | | | | | | |
| Algeria | | | 1 | | | | | | | | 1 |
| Central African Empire | | | | 1 (—) | (1) | | | | | | 1 |
| Congo | | | | 1 (—) | (1) | | | | | | 1 |
| Egypt | | | | 2 (—) | (1) | (1) | | | | | 2 |
| Ethiopia | | | 1 (—) | (1) | | | | | | | 1 |
| Morocco | 1 | | 1 (—) | (2) | | | | | | | 2 (3) |
| Tunisia | 1 | | 1 (—) | 1 (—) | (1) | | | | | | 3 (2) |
| <i>Region E — Asia and Australasia</i> | | | | | | | | | | | |
| Afghanistan | | | 1 (—) | (1) | | | | | | | 1 |
| Australia | 1 | | 1 (—) | 1 | (1) | | | | | | 3 |
| Bangladesh | | | | 1 (—) | (1) | | | | | | 1 |
| China | | 1 | | 1 | | | | | | | 2 |
| Korea (Rep. of) | | | | 1 (—) | (1) | | | | | | 1 |
| India | | 1 | 1 (—) | 1 (2) | (1) | 1 (—) | 1 (2) | | | | 5 (6) |
| Indonesia | | | | 1 (—) | (1) | | | | | | 1 |
| Iran | | | | 1 (—) | (1) | | | | | | 1 |
| Iraq | | | | | 1 | | | | | | 1 |
| Israel | | | | 1 (—) | (1) | | | | | | 1 |
| Japan | 1 | | 2 (—) | 1 (3) | 1 | (1) | | | | | 5 (6) |
| Pakistan | | | 1 (—) | (1) | | | | | | | 1 |
| Total | 9 | 13 (8) | 33 (11) | 50 (39) | 42 (59) | 26 (33) | 2 (12) | 1 (5) | — (2) | — (3) | 176 (181) |

(Wherever changes have taken place, the figure for 1976 appears in parentheses.)

TABLE 5

Geographical distribution on 31 December 1977

(Headquarters staff whose salaries are paid from the ordinary budget of the Union)

| Country | Elected officials | D.1 | P.5 | P.4 | P.3 | P.2 | P.1 | G.7 | G.6 | G.5 | Total |
|--|-------------------|--------|---------|---------|---------|---------|--------|-------|-------|-------|-----------|
| <i>Region A — America</i> | | | | | | | | | | | |
| Brazil | | | 1 (—) | (1) | | 1 | | 1 (—) | | | 3 (2) |
| Canada | 1 | 1 (—) | | 1 | | | (1) | | | | 3 |
| United States | 1 | 1 | 3 (1) | 2 (3) | 1 (2) | | | | | | 8 |
| Haiti | | | | 1 (—) | (1) | | | | | | 1 |
| Mexico | | | 1 (—) | (1) | | | | | | | 1 |
| Paraguay | | | 1 | | | | | | | | 1 |
| <i>Region B — Western Europe</i> | | | | | | | | | | | |
| Germany (Fed. Rep. of) | | 1 | | 2 (1) | 2 (3) | 1 | 1 | | (1) | | 7 (8) |
| Belgium | | | | | 2 (1) | 1 | | | | | 3 (2) |
| Denmark | | | | 1 | | | | | (1) | | 1 (2) |
| Spain | | | | 1 (—) | 6 (4) | 1 (2) | (2) | | | | 8 |
| France | 1 | 2 (1) | 2 | 4 (2) | 5 | 5 (4) | (1) | (2) | | (1) | 19 |
| Italy | | | | 2 (1) | 1 | (1) | (1) | | | | 3 (4) |
| Norway | | | | | | | | | | (1) | — (1) |
| Netherlands | | | 1 (—) | (1) | 2 (1) | (1) | | | | | 3 |
| United Kingdom | 1 | 1 (—) | 4 (3) | 2 (3) | 3 (2) | 1 (3) | | | | | 12 (13) |
| Sweden | | | | 1 | | 1 (—) | (1) | | | | 2 |
| Switzerland | | 1 (—) | 6 (2) | 7 | 11 (7) | 11 (12) | (2) | (2) | | (1) | 36 (33) |
| Turkey | | 1 (—) | (1) | | | | | | | | 1 |
| <i>Region C — Eastern Europe and Northern Asia</i> | | | | | | | | | | | |
| Bulgaria | | | | 1 (—) | (1) | | | | | | 1 |
| Hungarian People's Rep. | | | | | (1) | | | | | | — (1) |
| Poland (People's Rep. of) | | 1 | | | 1 | | | | | | 2 |
| Ukraine | | | | | 1 | | | | | | 1 |
| U.S.S.R. | 1 | 1 | 1 (—) | 2 (1) | (2) | | | | | | 5 |
| <i>Region D — Africa</i> | | | | | | | | | | | |
| Algeria | | | 1 | | | | | | | | 1 |
| Egypt | | | | 1 (—) | | (1) | | | | | 1 |
| Morocco | 1 | | 1 (—) | (2) | | | | | | | 2 (3) |
| Tunisia | 1 | | | | | | | | | | 1 |
| <i>Region E — Asia and Australasia</i> | | | | | | | | | | | |
| Afghanistan | | | 1 (—) | (1) | | | | | | | 1 |
| Australia | 1 | | 1 (—) | 1 | (1) | | | | | | 3 |
| China | | 1 | | 1 | | | | | | | 2 |
| India | | 1 | 1 (—) | 1 | | | 1 | | | | 4 (3) |
| Indonesia | | | | 1 (—) | (1) | | | | | | 1 |
| Iran | | | | 1 (—) | (1) | | | | | | 1 |
| Iraq | | | | | 1 | | | | | | 1 |
| Israel | | | | 1 (—) | (1) | | | | | | 1 |
| Japan | 1 | | 2 (—) | 1 (3) | 1 | (1) | | | | | 5 (6) |
| Pakistan | | | 1 (—) | (1) | | | | | | | 1 |
| Total | 9 | 12 (7) | 28 (11) | 35 (34) | 37 (39) | 22 (28) | 2 (10) | 1 (5) | — (2) | — (3) | 146 (148) |

(Wherever changes have taken place, the figure for 1976 appears in parentheses.)

TABLE 6

Geographical distribution on 31 December 1977

(Officials at Headquarters whose salaries are paid from the technical cooperation budget)

| Country | D.1 | P.5 | P.4 | P.3 | P.2 | P.1 | Total |
|--|-----|-------|--------|--------|-------|-------|---------|
| <i>Region A – America</i> | | | | | | | |
| Argentina | | 1 (–) | (1) | (1) | | | 1 (2) |
| Canada | | | | 1 (–) | (1) | | 1 |
| United States | | | 2 (–) | (2) | | | 2 |
| <i>Region B – Western Europe</i> | | | | | | | |
| France | | | 2 (–) | (2) | 1 | | 3 |
| Greece | | | | 1 | | | 1 |
| Cyprus | | | 1 (–) | (1) | | | 1 |
| Italy | | 1 (–) | 1 | 1 (2) | | | 3 |
| Netherlands | | | 1 (–) | (1) | | (1) | 1 (2) |
| United Kingdom | | | 1 (–) | 1 | 1 (2) | | 3 |
| Sweden | | 1 (–) | (1) | | | | 1 |
| Switzerland | | | 1 (–) | 1 (2) | 1 | | 3 |
| <i>Region C – Eastern Europe and Northern Asia</i> | | | | | | | |
| Yugoslavia | 1 | | | | | | 1 |
| <i>Region D – Africa</i> | | | | | | | |
| Central African Empire | | | 1 (–) | (1) | | | 1 |
| Congo (People's Rep.) | | | 1 (–) | (1) | | | 1 |
| Egypt | | | 1 (–) | (1) | | | 1 |
| Ethiopia | | 1 (–) | (1) | | | | 1 |
| Tunisia | | 1 (–) | 1 (–) | (1) | | | 2 (1) |
| <i>Region E – Asia and Australasia</i> | | | | | | | |
| Bangladesh | | | 1 (–) | (1) | | | 1 |
| Corea (Rep. of) | | | 1 (–) | (1) | | | 1 |
| India | | | (1) | (1) | 1 (–) | (1) | 1 (3) |
| Total | 1 | 5 (–) | 15 (5) | 5 (20) | 4 (5) | – (2) | 30 (33) |

(The figures for 1976 are shown in parentheses.)

TABLE 7

Geographical distribution on 31 December 1977
(Experts engaged in technical cooperation activities)

| Country by region | Total by region | P.6 | P.5 | P.4 | P.3 | P.2 | P.1 | Total |
|--|------------------|----------------|-----------------|----------------|--------------|----------------|---------------|------------------|
| <i>Region A — America</i> | | | | | | | | |
| Argentine Republic | | 1 (—) | — (2) | | | | | 1 (2) |
| Brazil | | | 1 (—) | | | | | 1 (—) |
| Canada | | 1 (1) | 3 (1) | | | | | 4 (2) |
| Colombia | | | 1 (2) | 1 (1) | | | | 2 (3) |
| United States | | 2 (3) | 3 (4) | 2 (2) | | | | 7 (9) |
| Guyana | | | | 1 (1) | | | | 1 (1) |
| Peru | | | — (1) | | | | | — (1) |
| .../... | 16 (18) | | | | | | | |
| <i>Region B — Western Europe</i> | | | | | | | | |
| Germany (Fed. Rep. of) | | 1 (1) | 2 (5) | 8 (8) | | 7 (6) | | 18 (20) |
| Denmark | | | — (1) | 1 (—) | | 1 (1) | 5 (3) | 6 (4) |
| Spain | | | 1 (—) | | | | | 1 (1) |
| Finland | | | 1 (—) | | | | — (1) | 1 (1) |
| France | | — (1) | 8 (11) | 5 (7) | | 1 (1) | | 14 (20) |
| Greece | | | 1 (1) | | | | | 1 (1) |
| Ireland | | 1 (—) | 2 (3) | 3 (2) | | | | 6 (5) |
| Italy | | | 2 (3) | 1 (4) | | | | 3 (7) |
| Norway | | 1 (1) | 2 (1) | — (1) | | | | 3 (3) |
| Netherlands | | | 3 (2) | 3 (2) | 1 (—) | 3 (5) | 5 (3) | 15 (12) |
| Portugal | | | — (1) | | | | | — (1) |
| United Kingdom | | 5 (3) | 22 (20) | 16 (16) | | 2 (—) | | 45 (39) |
| Sweden | | 1 (1) | 7 (5) | 5 (7) | — (2) | 3 (3) | — (1) | 16 (19) |
| Switzerland | | | 2 (1) | | — (1) | | | 2 (2) |
| Turkey | | | — (1) | | | | | — (1) |
| .../... | 131 (136) | | | | | | | |
| <i>Region C — Eastern Europe and Northern Asia</i> | | | | | | | | |
| Bulgaria | | | | 1 (—) | | | | 1 (—) |
| Hungarian People's Rep. | | | | 1 (1) | | | | 1 (1) |
| Poland (People's Rep. of) | | | 1 (3) | 2 (2) | | | | 3 (5) |
| Ukraine | | | 1 (—) | | | | | 1 (—) |
| Roumania (Socialist Republic of) | | | — (1) | | | | | — (1) |
| U.S.S.R. | | | — (2) | 1 (3) | | | | 1 (5) |
| Yugoslavia | | | — (1) | 1 (—) | | | | 1 (1) |
| .../... | 8 (13) | | | | | | | |
| <i>Region D — Africa</i> | | | | | | | | |
| Egypt | | | 3 (2) | 4 (4) | | 1 (1) | | 8 (7) |
| Ethiopia | | 1 (1) | 1 (1) | | | | | 2 (2) |
| Tunisia | | — (1) | | | | | | — (1) |
| .../... | 10 (10) | | | | | | | |
| <i>Region E — Asia and Australasia</i> | | | | | | | | |
| Australia | | 2 (1) | 4 (4) | | | | | 6 (5) |
| Bangladesh | | | | — (1) | | | | — (1) |
| India | | 3 (1) | 11 (12) | 13 (10) | | | | 27 (23) |
| Japan | | 1 (1) | 7 (5) | 4 (5) | | 1 (1) | 1 (—) | 14 (12) |
| Jordan | | | 1 (—) | 1 (1) | | | | 2 (1) |
| Lebanon | | | 1 (—) | | | | | 1 (—) |
| Nepal | | | | 1 (—) | | | | 1 (—) |
| New Zealand | | | 3 (3) | 1 (1) | | 1 (—) | | 5 (4) |
| Pakistan | | | 4 (2) | 2 (3) | | | | 6 (5) |
| Syrian Arab Republic | | | 1 (—) | | | | | 1 (—) |
| Sri Lanka | | | | 2 (—) | | | | 2 (—) |
| .../... | 65 (51) | | | | | | | |
| Total | 230 (228) | 20 (16) | 98 (101) | 80 (82) | 1 (3) | 20 (18) | 11 (8) | 230 (228) |

(The figures for 1976 are shown in parentheses.)

7.2 Financial questions

7.2.1 In accordance with Article 56, No. 288, of the Malaga-Torremolinos Convention, 1973, and of Article 49 of the Union's Financial Regulations, the Secretary-General prepares each year for submission to the Administrative Council a financial operating Report containing all requisite information on financial administration and the recapitulatory accounts for the past year. After examination and approval by the Administrative Council, the Report is sent to the Members. In order to give an idea of the credits allocated to the various activities of the Union and of the position of the accounts for the financial year, the budget and the accounts for 1977 are reproduced in Annex 2 to this Report.

7.2.2 In accordance with Article 15 of the Malaga-Torremolinos Convention, 1973, and of Articles 2 and 6 of the Union's Financial Regulations, the budget of the Union comprises the costs of the Administrative Council and the permanent organs of the Union, on the one hand and, on the other, of the Plenipotentiary Conferences and world administrative conferences. There are two additional budgets, i.e. the Technical Cooperation special accounts budget (administrative and operational costs of Technical Cooperation projects) and the supplementary publications budget.

7.2.3 Additional Protocol I to the Malaga-Torremolinos Convention, 1973, lays down the limits within which the Administrative Council is authorized to draw up the Union's annual budgets. For 1977, these limits were:

37,600,000 Swiss francs for recurrent expenditure

3,400,000 Swiss francs for conferences and meetings, including seminars, but not including regional conferences. This limit, however, had to be increased by 3,200,000 Swiss francs for the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service. This credit had been provided for by the Plenipotentiary Conference within the 1976 expenditure limit and could not be used in view of the provisions of point 3.2 c) of Additional Protocol I. The limit for 1977 was therefore 6,600,000 Swiss francs.

Paragraph 4 of the Additional Protocol authorizes the Administrative Council to exceed the above limits to take account of increases in the salary scales, pension contributions or allowances, including post adjustments, established by the United Nations for application to their staff employed in Geneva, and of fluctuations in the exchange rate between the Swiss franc and the US dollar which would involve additional expenses for the Union. Under paragraph 3.3 of the Additional Protocol, the Administrative Council may also authorize expenditure in excess of the limit specified for expenditure on conferences and meetings, if the excess can be compensated by sums accrued from a previous year.

7.2.4 At its 31st Session, in Resolution No. 780, the Administrative Council approved the budgets for 1977 amounting to:

46,373,000 Swiss francs for recurrent expenditure, including 36,881,000 Swiss francs within the expenditure limit (margin of 719,000 Swiss francs) and 9,492,000 Swiss francs above the limit,

8,108,000 Swiss francs for conferences and meetings, including 5,314,700 Swiss francs within the expenditure limit (margin of 1,285,300 Swiss francs), 1,290,000 Swiss francs above the limit, 103,300 Swiss francs covered by the funds accrued from 1974, 1975 and 1976 and 1,400,000 Swiss francs withdrawn from the expenditure limit for 1978,

110,000 Swiss francs for expenditure covered by the renewal fund for simultaneous interpretation and other electroacoustical equipment and by the CCITT Reserve Fund,

4,350,000 Swiss francs transferred to the ITU Reserve Account, in accordance with Resolution No. 11 of the Malaga-Torremolinos Conference, 1973, i.e. a total of

58,941,000 Swiss francs for the ordinary budget,

7,847,000 Swiss francs for Technical Cooperation administrative costs,

7,246,000 Swiss francs for the supplementary publications budget.

7.2.5 In the same resolution, the Administrative Council fixed the amount of the contributory unit in 1977 at 129,000 Swiss francs on the basis of the classification chosen by Members in accordance with Nos. 92 and 93 of the Malaga-Torremolinos Convention, 1973, i.e. on the basis of a total of 423 ½ units.

7.2.6 Lastly, in accordance with Article 79, No. 553, of the Malaga-Torremolinos Convention, 1973, the Administrative Council decided to fix the unit of contribution towards defraying the expenses of the CCIR and the CCITT for recognized private operating agencies, scientific or industrial organizations and international organizations not exempt under Administrative Council Resolution No. 574 at 21,600 Swiss francs for 1977.

7.2.7 In Resolution No. 647, the Administrative Council instructed the Secretary-General to introduce changes in the basic salary scales of staff in the senior counsellor, professional and general service categories and in the rates and class of post adjustment as and when such changes were introduced by the United Nations for the staff of the United Nations Office at Geneva. Such changes having occurred between the approval by the Administrative Council of Resolution No. 780 on the budget for 1977 and the end of the financial year 1977, the Secretary-General was obliged to increase the budget by:

1,138,900 Swiss francs for the ordinary budget,

186,000 Swiss francs for the Technical Cooperation special accounts budget,

38,300 Swiss francs for the supplementary publications budget.

7.2.8 The budgets of the Union for 1977 therefore finally amounted to:

60,079,900 Swiss francs for the ordinary budget,

8,033,000 Swiss francs for the Technical Cooperation special accounts budget,

7,260,300 Swiss francs for the supplementary publications budget.

*Classification of Members of the Union
for the apportionment of expenditure in 1977*

7.2.9 At the end of 1976, the Union had 152 Members contributing on the basis of a total of 420 ½ units.

7.2.10 Following the accession of two new Members in 1977, on 31 December 1977 the Union had 154 Members contributing on the basis of a total of 426 ½ units. This total number of contributory units takes into account the decision of the Federal Republic of Germany to participate in the expenses of the Union in the 25-unit instead of the 20-unit class, as from 1977.

Cash resources

7.2.11 In 1977, the situation of the Union's cash resources was appreciably better than in preceding years. Payment of contributions sufficed to cover the expenses of the Union, so that it proved unnecessary to request the Government of the Swiss Confederation to advance any funds.

Contributions in arrear

7.2.12 The total amounts due on 31 December 1975, 1976 and 1977 were as follows:

| | |
|------------------|---------------------------|
| 31 December 1975 | 3,800,311.69 Swiss francs |
| 31 December 1976 | 3,678,849.26 Swiss francs |
| 31 December 1977 | 4,488,847.60 Swiss francs |

7.2.13 The amounts in the special arrears account established pursuant to Resolution No. 10 of the Malaga-Torremolinos Conference, 1973, and not yet settled on 31 December 1977, total 4,413,687.47 Swiss francs. Since the Plenipotentiary Conference this special arrears account has thus been reduced by the payment by the Members concerned of 2,146,328.71 Swiss francs, including 661,898.10 Swiss francs which were paid in 1977.

7.2.14 Annex 7 to this Report shows the situation of the Union's principal debtors on 31 December 1977.

8. RELATIONS WITH THE UNITED NATIONS AND OTHER INTERNATIONAL ORGANIZATIONS

UNITED NATIONS

In accordance with the relationship agreement between the United Nations and the International Telecommunication Union (Annex 3 to the Convention), the Administrative Council has continued to consider recommendations addressed to the specialized agencies by the United Nations. In particular the Administrative Council took note of a report on the action undertaken by the Secretary-General of the Union in response to General Assembly resolutions dealing with development and international economic cooperation. Following a detailed discussion of the importance of telecommunications in economic and social development the Administrative Council adopted a resolution dealing with the role of the Union in this domain (Resolution No. 800). This resolution has been communicated to all Administrations and also to the United Nations, the concerned specialized agencies and other regional and international organizations active in the field of telecommunications.

The Union has participated in the work of the General Assembly and the Economic and Social Council by providing information required by these organs, by contributing, within its field of competence, to United Nations system reports considered by the General Assembly and the Council and by being represented at the summer session of the Economic and Social Council when questions concerning the coordination of activities were considered. The Secretary-General represented the Union at the annual joint meeting between the Committee for Programme and Coordination and the Administrative Committee for Coordination.

The *ad hoc* Committee of the General Assembly on the Restructuring of the United Nations system completed its work during the year and submitted its final report to the thirty-second session of the General Assembly. The Assembly took action on the report adopting a resolution entitled "Restructuring of the economic and social sectors of the United Nations system". This resolution contains wide ranging policy decisions which will affect the working of the General Assembly and the Economic and Social Council and involve the restructuring of the United Nations secretariat. The precise effect of this resolution on the relations between the United Nations and the different specialized agencies has yet to be determined and the resolution will be considered by the thirty-third session of the ITU Administrative Council.

In proclaiming a "Transport and Communication Decade in Africa during the years 1978-88", the General Assembly made particular reference to the importance of telecommunications and recognized the vital role of the ITU. The Assembly went on to request the Secretary-General of the United Nations, in consultation with the ITU and other specialized agencies concerned, to make proposals concerning the celebration of a World Communications Year. Interagency consultations are already in hand and the ITU will play a leading role in the preparation of the proposals to be submitted to the sixty-fifth (1978) session of the Economic and Social Council.

On the more technical level, the Union was represented at the twentieth session of the Committee on the Peaceful Uses of Outer Space and at the annual sessions of the Scientific and Technical Sub-Committee and the Legal Sub-Committee. The Sixteenth Report by the ITU on "Telecommunications and the Peaceful Uses of Outer Space" was brought before these United Nations organs.

The ITU also continued its participation in the work of United Nations bodies dealing with science and technology. The Union was represented at the twenty-third session of the United Nations Advisory Committee on the Application of Science and Technology to Development (ACAST) and in the meetings of the intergovernmental Preparatory Committee for the United Nations Conference on Science and Technology for Development, which held its second session in Geneva. Officials of the Union also attended the fourth session of the United Nations Committee for Science and Technology for Development (CSTD). These latter meetings were held in Geneva at the beginning of 1978.

It is of interest to note that the broad subject of "transport and communications" has been retained as one of the agenda items for the United Nations Conference on Science and Technology for Development. The subject has not, as yet, been further defined during the preparatory process and no special contribution has been requested from the ITU. The Union has however contributed to a general description of the competence of the United Nations system in science and technology underlining the mandate of the ITU in the field of telecommunications.

The relations of the Union with the United Nations Development Programme (UNDP) are the subject of detailed comment in the section of this report dealing with technical assistance activities.

The International Civil Service Commission (ICSC) has been provided with information relating to all organizations of the United Nations system through the inter-agency Consultative Committee on Administrative Questions. The participation of the Union in this Committee is reported in the section dealing with the Personnel Department.

Coordination of the activities of the United Nations system at the inter-secretariat level has been achieved through the Administrative Committee on Coordination (CAC). The Secretary-General has attended all sessions of the ACC held during 1977 and other officials of the Union have participated in meetings of a number of the subsidiary bodies of the Committee. In particular the ITU has been represented in the Sub-Committee for Outer Space Activities, the Sub-Committee on Science and Technology, the Sub-Committee on Education and Training, the Joint United Nations Information Committee (JUNIC), the Inter-Organization Board for Information Systems (IOB) and in other working groups and informal tasks forces dealing with matters of interest to the Union.

Officials from the Finance Department and the Department of Personnel have continued to represent the interests of the Union in the Consultative Committee for Administrative Questions (CCAQ). The ITU has been able to make known its position concerning the development of the United Nations common system and concerning the financing of joint United Nations activities and services.

The statute of the Joint Inspection Unit (JIU) adopted by the thirty-first session of the General Assembly has been considered by the Administrative Council which decided that the request addressed to the ITU concerning the acceptance of the statute, fell within the competence of the Plenipotentiary Conference. In the meantime the Administrative Council has requested the Secretary-General to seek clarification concerning the interpretation of a number of the points in the statute while continuing the participation of the Union in the JIU in accordance with the established practice.

The following JIU reports, of concern to the Union, were issued during 1977,

Report (abridged title)

Evaluation in the UN system
(JIU/REP/77/1)

Africa and Western Asia (Technical Cooperation)
(JIU/REP/77/2)

First class travel
(JIU/REP/77/3)

General Service Staff
(JIU/REP/77/4)

Implications of Additional languages in the UN system
(JIU/REP/77/5)

Backstopping of technical cooperation activities
(JIU/REP/77/6)

REGIONAL ORGANIZATIONS

Africa

During 1977 representatives of several regional and sub-regional organizations in Africa visited the ITU to discuss the scope of collaboration and cooperation in the development of telecommunications in the region (Mano River Union, ECOWAS, UAPT). Close contacts were constantly maintained with regional and international development banks and other financing institutions (ABD, BADEA, IDA/IBRD, EEC/FED) and the activities of the Union in providing assistance to several African countries, in negotiating the financing of telecommunication development, served to further strengthen relations with these regional and international organizations. The Union also provided assistance to the countries concerned in the execution of projects for the development and extension of their telecommunications services.

The PANAFTTEL Coordinating Committee (OAU, ECA, ADB, ITU) met at the ITU Headquarters in September 1977 to review, among other subjects, the progress made in the implementation of the Pan-African Telecommunication Network (PANAFTTEL) and its relation with different sub-regional economic communities capable of financing some parts of the Network. During the year, the ITU PANAFTTEL Team participated in sub-regional coordination meetings, concerning field activities, organized in conjunction with Regional Conferences of African Telecommunication Administrations and held in Togo, Seychelles and Cameroon (CAPTAC, CAPTEAO, East and Southern Africa Region).

The ITU continued to be invited to all major meetings of ECA, OAU, ADB and URTNA where it was represented as appropriate. Full assistance was extended to the newly created Pan-African Telecommunication Union (PATU) in the drafting of the Convention. The ITU was represented by the Secretary-General on the occasion of the Plenipotentiary Conference for the creation of PATU, which was convened by the OAU and held in Addis Ababa in May 1977. The ITU also attended the subsequent PATU Plenipotentiary Constitutional Conference held in the same city in December 1977.

Latin America

As previously reported, the withdrawal during 1976 of UNDP financing for the posts of ITU Regional Experts in Latin America resulted in a reduction in the contacts maintained between the Union and regional organizations. Following action by the Administrative Council it was found possible to partially redress this situation and to reinstate one regional expert as from September 1977. As a consequence the ITU has been able to reinforce its collaboration with the Organization of American States (OAS) by maintaining close contact with the Inter-American Telecommunications Commission (CITEL).

Collaboration with the Central American Telecommunication Commission (COMTELCA) continued and was strengthened by implementing a preliminary programme of Technical Cooperation among Developing Countries (TCDC) in this region.

Relations with CARICOM were maintained through a regional advisory post serving a number of countries in the Caribbean. A report prepared by this expert will assist CARICOM to define future policies in the field of telecommunications.

Contacts between the Union and the Inter-American Development Bank (IDB), the Economic Commission for Latin America (ECLA) and the Caribbean Development and Cooperation Committee (CDCC) were maintained during 1977. During a mission effected in October to Central America, the Secretary-General of the Union paid a visit to the Central American Bank for Economic Integration (CABEI) and, on this occasion, the ITU was requested to make a contribution towards a policy paper the Bank intends to prepare. A mission by an ITU expert will take place in 1978 to provide the requested assistance.

Asia and the Pacific

Cooperation between the ITU and the Economic and Social Commission for Asia and the Pacific (ESCAP) was actively maintained throughout 1977. Because of increased support from UNDP, the ITU was able to strengthen its team in Bangkok with a consequent increase in activities and cooperation by the ESCAP/ITU experts in matters relating to the development of telecommunications in the region. The Union participated in the 33rd session of the Economic and Social Commission meeting held in April 1977 and also in the Transport, Communications and Shipping Committee meeting of the ESCAP which was held in December 1977.

The ITU maintained a very close liaison with UNESCO in this region, particularly in matters relating to technical cooperation activities in which the competence of both organizations was needed. The ITU and UNESCO are collaborating in two projects; one in Afghanistan and the other in Bangladesh, in matters relating to the development of radio and television. The ITU is also participating in the series of UNESCO sponsored meetings concerning the development of news agencies and news exchanges. The first meeting on this subject was held in Colombo in December 1977.

The ITU maintained close contact with the Asian Institute for Broadcasting Development (AIBD), Kuala Lumpur, and various possibilities for mutual cooperation were discussed during an exchange of visits. In April 1977 the Union participated in the Inter-Governmental meeting for the formalization of the establishment of AIBD. During this meeting the ITU was elected to participate in the Governing Council of the Institute.

The ITU maintains continuous and active contacts with the South Pacific Bureau for Economic Cooperation (SPEC). These contacts relate primarily to the development of telecommunications in the South Pacific region. The Union continues to provide technical backstopping to SPEC, particularly in formulating the loan application of some of the SPEC member countries to the European Economic Community. In April 1977 the ITU participated in the Regional Inter-Governmental Telecommunication meeting, held in Port Moresby, Papua New Guinea, to discuss the progress of UNDP/ITU technical cooperation activities in the region and also to formulate the future needs of technical assistance.

The Union also maintains a cordial relationship with the Asian Development Bank. Following a request from the Bank, the ITU provided short-term assistance in matters relating to tender specifications and tender evaluation for telecommunication development in Tonga.

Although no important meeting of the Asian Broadcasting Union, relating to mutual cooperation with the ITU, took place in 1977, the ITU continued to maintain close contact and a cordial relationship with the Union.

Europe, the Mediterranean and the Middle East

As in previous years, the ITU maintained fruitful contact with the Economic Commission for Western Asia (ECWA).

During the year, well-established cooperative arrangements continued to operate between the Union, the Arab League, the Arab Telecommunication Union (ATU) and the Arab States Broadcasting Union (ASBU). Although cooperation with these organizations extended into many areas of mutual concern, of particular interest was the execution of the project "Feasibility Study/Preinvestment Survey for the Middle East Telecommunication Network". Progress meetings have been held at the sub-regional level in Abu Dhabi (UAE), Doha (Qatar), Mogadiscio (Somalia) and Athens (Greece). Meetings were also held with the Arab Fund for Economic and Social Development (AFESD) in regard to the survey work. At these meetings, technico-economic reports concerning the network were discussed. In connection with the study and preparation for the Arab Regional Satellite project, information was exchanged between the regional organizations, ATU and ASBU.

In the preparatory work connected with the establishment of an Arab Regional Telecommunication Institute, contacts were maintained with ATU, ASBU and the host country, Saudi Arabia.

In the field of maritime and coastal telecommunication in the Mediterranean and Middle East, the Union's cooperation was extended to IMCO, UNEP and ATU. The Union also cooperated with the United Nations Department of Economic and Social Affairs, IMCO and UNEP on the programme for the Development and Protection of the Marine Environment and Coast Areas.

The Arab Fund for Economic and Social Development (AFESD) financed regional seminars on signalling systems and tariffs for the countries of the region. In addition, a regional course on electronic switching systems was organized at the request of the Administrations of the region, with the financial support of the Government of Saudi Arabia.

Contacts were made with AFESD, the Kuwait Fund for Arab Economic Development and the Islamic Bank concerning the financing of assistance in the implementation of certain training and survey projects in the Middle East.

SPECIALIZED AGENCIES

The Union has continued to maintain a special relationship with those agencies of the United Nations system which have a particular interest in telecommunications. The provisions of Administrative Council Resolution No. 196 have been observed in dealing with matters of common technical interest for the Union and the International Civil Aviation Organization (ICAO), the World Meteorological Organization (WMO) and the Intergovernmental Maritime Consultative Organization (IMCO). Questions of mutual interest have also required close contact between the Union and the Universal Postal Union (UPU). Officials from these specialized agencies have participated in meetings of the Union and the list of missions annexed to this report indicates the representation of the Union in conferences and meetings of these other organizations.

During 1977 an informal working group was established comprising members of the secretariats of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the ITU to ensure close coordination of activities undertaken in response to a number of resolutions of the United Nations General Assembly. The first meeting of this working group was convened in November 1977 when agreement was reached on a number of procedural matters concerning future cooperation. Since that time satisfactory progress has been achieved in the preparation of draft reports for submission to the United Nations and in other matters of common interest.

On the more general level, the Secretary-General has maintained close contact with the executive heads of other specialized agencies of the United Nations system through his participation in the Administrative Committee on Coordination (ACC). The Union has continued fruitful relations with other agencies in all matters falling within its field of competence by participating in the various specialized Sub-Committees which comprise the subsidiary organs of the ACC. Administrative questions concerning the development of the United Nations "common system" have been studied by the inter-agency Consultative Committee on Administrative Questions with the full participation of the Union and other specialized agencies.

OTHER INTERNATIONAL ORGANIZATIONS

As in previous years, many international organizations, having an interest in telecommunications, have participated in the work of the Union. In general, these organizations have provided reciprocal facilities for the ITU to attend their conferences and meetings and the resulting cooperation has been beneficial to the cause of telecommunication development.

The following, non-exhaustive, list indicates those international organizations with which the ITU has maintained close relations during 1977.

Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA).

Committee on Space Research (COSPAR)

Danube Commission

European Broadcasting Union (EBU)

European Conference of Posts and Telecommunications (CEPT)

European Space Agency (ESA)

European Space Research Organization (ESRO)

Inter-American Association for Broadcasters (IAAB)

International Air Transport Association (IATA)

International Amateur Radio Union (IARU)

International Association of Lighthouse Authorities (IALA)

International Astronautical Federation (IAF)

International Chamber of Commerce (ICC)

International Committee on the Red Cross (CICR)

International Council of Scientific Unions (ICSU)

International Criminal Police Organization (INTERPOL)

International Electrotechnical Commission (IEC)

International Organization for Standardization (ISO)

International Marine Radio Association (CIRM)

International Radio and Television Organization (OIRT)

International Space Telecommunication Organization (INTERSPOUTNIK)

International Special Committee on Radio Interference (CISPR)

International Telecommunications Satellite Organization (INTELSAT)

International Time Bureau (BIH)

International Union of Radio Science (URSI)

Inter-Union Committee on Allocation of Frequencies for Radio Astronomy and Space Science (IUCAF)

Organization for Economic Cooperation and Development (OECD)

ANNEX 1

POSITION OF MEMBERS IN RELATION TO THE ACTS OF THE UNION ON 31 DECEMBER 1977

Table I. *Malaga-Torremolinos Acts (1973) and Regulations annexed thereto :*

- International Telecommunication Convention, Malaga-Torremolinos, 1973;
- Optional Additional Protocol to the International Telecommunication Convention, Malaga-Torremolinos, 1973, on the Compulsory Settlement of Disputes;
- Telegraph and Telephone Regulations (Geneva, 1973).
- Radio Regulations and Additional Radio Regulations (A.R.C., Geneva, 1959);
- Partial Revision of the Radio Regulations (E.A.R.C., Geneva, 1963) (space);
- Partial Revision of the Radio Regulations (E.A.R.C., Geneva, 1966) (aeronautical);
- Partial Revisions of the Radio Regulations and of the Additional Radio Regulations (W.A.R.C., Geneva, 1967) (maritime);
- Partial Revision of the Radio Regulations (W.A.R.C., Geneva, 1971) (space-2);
- Partial Revisions of the Radio Regulations and of the Additional Radio Regulations (W.A.R.C., Geneva, 1974) (maritime-2).

Table II. *African Regional Agreements :*

- Regional Agreement for the African Broadcasting Area concerning the use of frequencies by the broadcasting service in the very high frequency and ultra high frequency bands (Geneva, 1963);
- Regional Agreement concerning the use of frequencies by the broadcasting service in the medium frequency band in the African Broadcasting Area (Geneva, 1966).

Table III. *American Regional Agreements :*

- Inter-American Radio Agreement (FIAR) (Washington, 1949);
- North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950).

Table IV. *European Regional Conventions, Arrangements and Agreements :*

- European Broadcasting Convention (Copenhagen, 1948);
- European Regional Convention for the Maritime Mobile Radio Service (Copenhagen, 1948);
- Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951);
- Regional Agreement for the Use of Frequencies in the Bands 68-73 MHz and 76-87.5 MHz by the Broadcasting Service on the one hand and by the Fixed and Mobile Services on the other (Geneva, 1960);
- Regional Agreement for the European Broadcasting Area (Stockholm, 1961);
- Regional Arrangement concerning the Radiotelephone Service for the Rhine (Munich, 1976).

Table V. *Regional Agreement concerning the use by the broadcasting service of frequencies in the medium frequency bands in Regions 1 and 3 and in the low frequency bands in Region 1 (Geneva, 1975).*

Table VI. *Final Acts of the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1) (Geneva, 1977).*

VII. *Special Agreements.*

Table I.

POSITION ON

The letter S means that the Act concerned has been signed.
The letter A in columns 3 or 5 means accession; in the other columns, it means approval.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|-----------------------|--|--------------------------|--|---|--------------------------|---|------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference | | | |
| | Class of contribution No. of units | Convention, etc. * | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Geneva (1973) | | | |
| | | | | | | Telegraph Regulations | Telephone Regulations | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Afghanistan (Republic of) | ½ | S ¹) | 3. II. 1977 | S | | — | A ⁴) | — | A ⁴) |
| Albania (Socialist People's Republic of) ⁴⁰) | ½ | A | 5. I. 1976 ³⁹) | — | | S | A ⁴) | S | A ⁴) |
| Algeria (Algerian Democratic and Po- pular Republic) | 1 | S ¹) | 1. XI. 1976 | — | | S | A ⁴) | S | A ⁴) |
| Germany (Federal Republic of) | 25 | S ¹) | 18. XI. 1976 ³) ³⁷) | — | | S | A ⁵) | S | A ⁵) |
| Angola (People's Republic of) | ½ | A | 13. X. 1976 | — | | — | A ⁴) | — | A ⁴) |
| Saudi Arabia (Kingdom of) | 1 | S ¹) | 6. I. 1977 | — | | S | A ⁴) | S | A ⁴) |
| Argentine Republic | 3 | S ¹) | 19. I. 1977 ⁴⁸) | — | | S | A ⁴) | S | A ⁴) |
| Australia | 18 | S ¹) | 23. VI. 1975 | S | 23. VI. 1975 | S | A | S | A |
| Austria | 1 | S ¹) | 17. V. 1977 ²) | S | 17. V. 1977 | S | A ⁴) | S | A ⁴) |
| Bahamas (Commonwealth of the) | ½ | A | 16. X. 1975 ³⁰) | — | | — | A ⁴) | — | A ⁴) |
| Bahrain (State of) | ½ | A | 21. X. 1974 ¹¹) | — | | — | A ⁴) | — | A ⁴) |
| Bangladesh (People's Republic of) | 1 | S ¹) | 6. IV. 1976 ²) | — | | — | ¹) | — | ¹) |
| Barbados | ½ | S ¹) | 1. X. 1976 | A | 1. X. 1976 | — | A ⁴) | — | A ⁴) |
| Belgium | 5 | S ¹) | | S | | S | | S | |
| Benin (People's Republic of) ¹²) | ½ | S ¹) | | S | | S | | S | |
| Byelorussian Soviet Socialist Republic | 1 | S ¹) | 6. I. 1977 ⁴⁵) | — | | S | A | S | A |
| Burma (Socialist Republic of the Union of) ¹⁴) | ½ | S ¹) | 15. XI. 1976 | S | | — | A ⁴) | — | A ⁴) |
| Bolivia (Republic of) | ½ | S ¹) | | — | | — | | — | |
| Botswana (Republic of) | ½ | S ¹) | | — | | — | | — | |
| Brazil (Federative Republic of) | 5 | S | 30. XI. 1976 | S | | S | A | S | A |
| Bulgaria (People's Republic of) | 1 | S ¹) | 29. XII. 1976 ⁴³) | — | | S | A ⁴) | S | A ⁴) |

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations

31 DECEMBER, 1977

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|-------|--|------|---|-------|---|------|--|------|---|-------|------------------------------|-------|---|------|---|-------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| S | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | S | A 4) | — | A 4) | — | A 4) |
| S | 36) | — | 36) | — | 36) | — | 36) | — | 36) | — | 36) | S | 36) | — | 36) | — | 36) |
| — | A 4) | S | A | S | A | S | A | S | A 4) | S | A 4) | — | A 4) | S | A | S | A 4) |
| S | A 6) | S | A 7) | S | A 8) | S | A 8) | S | A 9) | S | A 10) | S | A | S | A 8) | S | A 10) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) |
| S | A 4) | — | A 4) | S | A 4) | — | A 4) | S | A 4) | S | A 4) | S | A 4) | — | A 4) | S | A 4) |
| S | A 24) | S | A 3) | S | A | S | A | S | A | S | A 4) | S | A 24) | S | A | S | A 4) |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A | S | A | — | A | S | A | S | A 4) | — | A 4) | S | A | S | A | — | A 4) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | A 4) | — | A 4) | — | |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | A 4) | — | A 4) | — | |
| — | 1) | — | 1) | — | 1) | — | 1) | — | 1) | S | 1) | — | 1) | — | 1) | S | 1) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) |
| S | A | S | A | S | A | S | A | S | | S | | S | A | S | A | S | |
| — | A | — | A | — | A 4) | — | | — | | S | | — | A | — | | S | |
| S | 1) | S | A | — | A 13) | — | 1) | S | A | — | 1) | S | 1) | — | 1) | — | 1) |
| S | A | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | S | A | — | A 4) | — | A 4) |
| S | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | | S | A 4) | — | A 4) | — | |
| — | A 4) | — | A 4) | — | A 4) | — | | — | | — | | — | A 4) | — | | — | |
| S | A | — | A 4) | S | A 4) | S | A 4) | S | A | S | A 4) | S | A | S | A 4) | S | A 4) |
| S | 43) | S | 43) | S | A 15) | S | 43) | S | 43) | S | 43) | S | 43) | S | 43) | S | 43) |

Table I.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|---------------------|--|--------------------------|--|---|--------------------------|--------------------------|-----------------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference Geneva (1973) | | | |
| | Class of contribution No. of units | Convention, etc. | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | | Telegraph Regulations | Telephone Regulations | |
| | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Burundi (Republic of) | ½ | S ¹⁾ | 25. I. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Cameroon (United Republic of) | ½ | S ¹⁾ | | S | | S | | S | |
| Canada | 18 | S | 20. I. 1975 | S | 20. I. 1975 | S | A | S | A |
| Cape Verde (Republic of) | ½ | A | 10. IX. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Central African Empire ⁴¹⁾ | ½ | S ¹⁾ | 5. I. 1976 | S | 5. I. 1976 | S | A | S | A |
| Chile | 1 | S ¹⁾ | 31. I. 1977 ⁴⁹⁾ | A | 31. I. 1977 | — | A ⁴⁾ | — | A ⁴⁾ |
| China (People's Republic of) | 20 | S ¹⁾ | 29. XII. 1976 ⁴²⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Cyprus (Republic of) | ½ | S ¹⁾ | 31. XII. 1976 | S | 31. XII. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Vatican City State | ½ | S | 10. XII. 1976 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Colombia (Republic of) | 3 | A | 21. II. 1975 | A | 21. II. 1975 | — | A ⁴⁾ | — | A ⁴⁾ |
| Comoros (State of the) | ½ | A | 5. I. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Congo (People's Republic of the) | ½ | S ¹⁾ | | S | | S | | S | |
| Korea (Republic of) | 1 | S ¹⁾ | 22. I. 1976 | S | 22. I. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Costa Rica | ½ | S | | S | | — | | — | |
| Ivory Coast (Republic of the) | 1 | S ¹⁾ | | S | | — | | — | |
| Cuba | 1 | S ¹⁾ | 14. I. 1977 ³⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Denmark | 5 | S ¹⁾ | 12. XI. 1974 | — | | S | A | S | A |
| Djibouti (Republic of) | ½ | A | 22. XI. 1977 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Dominican Republic | ½ | S | | S | | — | | — | |
| Egypt (Arab Republic of) | 2 | S ¹⁾ | 10. IX. 1976 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| El Salvador (Republic of) | ½ | S ¹⁾ | 6. I. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| United Arab Emirates | 1 | S ⁴⁾ | 29. XII. 1976 | S | 29. XII. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Ecuador | 1 | S | 24. I. 1975 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Spain | 3 | S ¹⁾ | 29. IV. 1976 | — | | S | A | S | A |
| United States of America | 30 | S ¹⁾ | 13. IV. 1976 ³⁾ | — | | S | A ³⁾ | S | A ³⁾ |
| Ethiopia | 1 | S | 29. XII. 1976 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Fiji | ½ | A | 17. IV. 1975 | A | 17. IV. 1975 | — | A | — | A |
| Finland | 3 | S ¹⁾ | 28. VII. 1975 | S | 5. XII. 1975 | S | A | S | A |

Convention, Regulations (continued)

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|------------------|--|-----------------|---|-----------------|---|-----------------|--|-----------------|---|-------------------|------------------------------|-----------------|---|-----------------|---|-----------------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A | — | A | — | A ⁴⁾ | S | | S | | S | | — | A | S | | S | |
| S | A | S | A ³⁾ | S | A | S | A | S | A | S | A | S | A ³⁾ | S | A | S | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A | — | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A | — | A ⁴⁾ | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ |
| — | 42) | — | 42) | — | 42) | — | 42) | — | 42) | S | 42) | — | 42) | — | 42) | S | 42) |
| — | A | S | A | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A | S | A ⁴⁾ | S | A ⁴⁾ |
| S | A | S | A | — | A | — | A | S | A | — | A ⁴⁾ | S | A | — | A | — | A |
| S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | | S | A ⁴⁾ | S | A ⁴⁾ | S | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A | — | A | — | | — | A | S | | S | | — | A | — | A | S | |
| S | A | S | A | — | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | | S | A ⁴⁾ | — | A ⁴⁾ | S | |
| — | A ¹⁸⁾ | — | A | — | A ⁴⁾ | S | | S | | S | | — | A | S | | S | |
| S | 1) | S | A | S | A | S | 1) | S | 1) | S | 1) | S | 1) | — | 1) | S | 1) |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | | — | | S | A | — | | — | |
| S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | | — | A ⁴⁾ | — | A ⁴⁾ | S | |
| S | A ³⁾ | S | A | S | A | S | A | S | A ⁴⁾ | S | A | S | A | S | A | S | A |
| S | A ²⁵⁾ | S | A | S | A | S | A | S | A | S | A ³⁾] | — | 1) | — | 1) | — | 1) |
| S | A | S | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A | S | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A | S | A | — | A | S | A | S | A | S | A | S | A | S | A | S | A |

*) Convention, Final Protocol, Additional Protocols.
**) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Table I.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|---------------------|--|--------------------------|--|---|-----------------|--------------------------|-----------------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference | | | |
| | Class of contribution No. of units | Convention, etc. | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Geneva (1973) | | | |
| | | | | | | Telegraph Regulations | | Telephone Regulations | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| France | 30 | S ¹⁾ | 29. XII. 1976 | — | 3. XI. 1975 | S | A ⁴⁾ | S | A ⁴⁾ |
| Gabon Republic | ½ | S ¹⁾ | | S | | S | | S | |
| Gambia (Republic of the) | ½ | A | 3. XI. 1975 | A | | — | A ⁴⁾ | — | A ⁴⁾ |
| Ghana | 1 | S ¹⁾ | 19. I. 1977 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Greece | 1 | S ¹⁾ | 13. I. 1977 ²⁾ | S | | S | A | S | A |
| Guatemala (Republic of) ⁵¹⁾ | 1 | S ¹⁾ | | — | | — | | — | |
| Guinea (Republic of) | ½ | S ¹⁾ | 5. X. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Guinea-Bissau (Republic of) | ½ | A | 15. I. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Equatorial Guinea (Republic of) | ½ | S ¹⁾ | | — | | — | | — | |
| Guyana | ½ | A | 30. XI. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Haiti (Republic of) | ½ | A | 10. XII. 1976 | — | 17. VI. 1975 | — | A ⁴⁾ | — | A ⁴⁾ |
| Upper Volta (Republic of) | ½ | S ¹⁾ | | S | | — | | — | |
| Honduras (Republic of) | ½ | — | | — | | — | | — | |
| Hungarian People's Republic | 1 | S ¹⁾ | 4. VIII. 1976 ²³⁾ | — | | S | A | S | A |
| India (Republic of) | 13 | S ¹⁾ | 20. IV. 1976 | — | | S | A | S | A |
| Indonesia (Republic of) | 1 | S ¹⁾ | 6. I. 1977 | S | | S | A ⁴⁾ | S | A ⁴⁾ |
| Iran | 1 | S ¹⁾ | 3. II. 1977 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Iraq (Republic of) | ½ | S ¹⁾ | 14. VI. 1977 ⁵⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Ireland | 2 | S | 20. IX. 1976 | — | | S | A | S | A |
| Iceland | ½ | S ¹⁾ | 6. I. 1977 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Israel (State of) | 1 | S ¹⁾ | 28. V. 1975 | — | 28. V. 1975 | S | A ⁴⁾ | S | A ⁴⁾ |
| Italy | 10 | S ¹⁾ | | — | | S | | S | |
| Jamaica | ½ | S ¹⁾ | 25. IV. 1975 ²⁾ | — | | S | A | S | A |
| Japan | 20 | S | 17. VI. 1975 | S | | S | A | S | A |
| Jordan (Hashemite Kingdom of) | ½ | A | 28. V. 1975 | A | | — | A ⁴⁾ | — | A ⁴⁾ |
| Democratic Kampuchea ⁵⁷⁾ | ½ | S ¹⁾ | | S | | — | | — | |
| Kenya (Republic of) | ½ | S ¹⁾ | | — | | S | | S | |
| Kuwait (State of) | 1 | S ¹⁾ | 7. II. 1977 ²⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |

¹⁾ Convention, Final Protocol, Additional Protocols.
^{**}) Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations (continued)

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|--------------------------------|--|------------------|---|------------------|---|-----------------|--|-----------------|---|-----------------|------------------------------|------------------|---|-----------------|---|-----------------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| S | A | S | A | S | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | S. | A | S | A | S | A ⁴⁾ |
| — | A | — | A | — | A ⁴⁾ | — | A ⁴⁾ | S | | — | | — | A | — | A ⁴⁾ | — | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| S | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | A ⁴⁾ | S | A ⁴⁾ |
| S | A | S | A | — | A ⁴⁾ | S | A | S | A | S | A ⁴⁾ | S | A | S | A | S | A ⁴⁾ |
| — | A ¹⁷⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | | — | A | — | A ⁴⁾ | — | |
| — | A ⁴⁾ | — | A | — | A | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A | S | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A | S | | S | | — | A ⁴⁾ | — | A | S | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| S | A ⁴⁾ ²³⁾ | S | A | S | A ¹⁸⁾ | S | A | S | A | S | A | S | A ⁴⁾ | S | A | S | A |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | A ⁴⁾ | S | A ⁴⁾ |
| S | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | — | A ⁴⁾ | S | A ⁴⁾ |
| S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ³⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ³⁾ |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A | S | A | — | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | A | S | A ⁴⁾ |
| S | A | S | A | — | A | S | A ⁴⁾ | S | A ⁴⁾ | S | | S | A | S | A ⁴⁾ | S | |
| S | A ²¹⁾ | S | A | S | A | S | | S | | S | | S | A ²¹⁾ | S | | S | |
| — | A ⁴⁾ | S | A ²⁰⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | | — | A ⁴⁾ | S | A ⁴⁾ | S | |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | | S | A | S | A ⁴⁾ | — | |
| S | A | S | A | — | A ⁴⁾ | — | | — | | S | | S | A | — | | S | |
| — | A ⁴⁾ | — | A | — | A | — | A | S | | — | A | — | A ⁴⁾ | — | A | — | A |
| S | A | S | A | S | A ⁴⁾ | S | A | S | A | S | A ⁴⁾ | S | A | S | A | S | A ⁴⁾ |

Table I.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|-----------------------|--|--------------------------|--|---|-----------------|--------------------------|-----------------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference | | | |
| | Class of contribution No. of units | Convention, etc. * | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Geneva (1973) | | | |
| | | | | | | Telegraph Regulations | | Telephone Regulations | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Lao People's Democratic Republic ³⁴⁾ . . . | ½ | S ¹⁾ | 6. I. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Lesotho (Kingdom of) | ½ | S ¹⁾ | 27. VIII. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Lebanon | 1 | S ¹⁾ | | S | | S | | S | |
| Liberia (Republic of) | 1 | S ¹⁾ | 22. IX. 1975 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Libya (Socialist People's Libyan Arab Jamahiriya) ⁵⁵⁾ | ½ | S ¹⁾ | 22. II. 1977 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Liechtenstein (Principality of). | ½ | S ¹⁾ | 4. II. 1976 | S | 4. II. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Luxembourg | ½ | S ¹⁾ | 26. VII. 1976 | S | 26. VII. 1976 | S | A | S | A |
| Madagascar (Democratic Republic of) ³⁵⁾ | 1 | S ¹⁾ | 17. III. 1976 | S | 17. III. 1976 | S | A | S | A |
| Malaysia | 3 | S ¹⁾ | 13. IV. 1976 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Malawi | ½ | S ¹⁾ | 25. V. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Maldives (Republic of). | ½ | A | 16. I. 1975 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Mali (Republic of) | ½ | S ¹⁾ | 21. XII. 1976 | S | 22. IX. 1977 | S | A ⁴⁾ | S | A ⁴⁾ |
| Malta (Republic of) ²⁶⁾ | ½ | A | 30. I. 1975 ²⁷⁾ | A | 30. I. 1975 | — | A ⁴⁾ | — | A ⁴⁾ |
| Morocco (Kingdom of) | 1 | S ¹⁾ | 28. I. 1977 | S | | S | A ⁴⁾ | S | A ⁴⁾ |
| Mauritius | ½ | S ¹⁾ | 8. VII. 1974 | S | 9. IV. 1975 | — | A ⁴⁾ | — | A ⁴⁾ |
| Mauritania (Islamic Republic of) | ½ | S ¹⁾ | 4. II. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Mexico | 3 | S | 23. VII. 1975 | — | | S | A | S | A |
| Monaco | ½ | S ¹⁾ | 23. XII. 1976 ²⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Mongolian People's Republic | ½ | S ¹⁾ | 18. X. 1977 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Mozambique (People's Republic of) . . . | ½ | A | 4. XI. 1975 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Nauru (Republic of) | ½ | — | | — | | — | | — | |
| Nepal | ½ | S ¹⁾ | 4. VII. 1977 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Nicaragua | 1 | S ¹⁾ | 25. III. 1977 | S | 18. X. 1977 | — | A ⁴⁾ | — | A ⁴⁾ |
| Niger (Republic of the) | ½ | S ¹⁾ | | — | | — | | — | |
| Nigeria (Federal Republic of) | 2 | S ¹⁾ | 24. VIII. 1976 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Norway | 5 | S ¹⁾ | 16. XII. 1976 | — | | S | A | S | A |
| New Zealand. | 3 | S ¹⁾ | 7. I. 1977 | S | 7. I. 1977 | S | A | S | A |

^{*)} Convention, Final Protocol, Additional Protocols.
^{**)} Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations (continued)

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|-----------------|--|-----------------|---|-----------------|---|-----------------|--|------------------|---|------------------|------------------------------|-----------------|---|-----------------|---|-----------------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| — | A | — | A | — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A | S | A | — | | — | | — | | S | | S | A | — | | S | |
| — | A | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S ²⁾ | A ⁴⁾ | S | | — | A | S | A ⁴⁾ | S | |
| S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A | S | A | S | A | — | A | S | A ⁴⁾ | S | A | S | A | — | A | S | A |
| — | A ⁴⁾ | — | A | — | A | — | A | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A | S | A ⁴⁾ |
| S | A | S | A | S | A | S | A ³⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | A ³⁾ | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| — | A | — | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | S | A ⁴⁾ | — | |
| S | A ³⁾ | S | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | — | A ⁴⁾ | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ |
| S | A | S | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | S | | S | A | S | A ⁴⁾ | S | |
| S | A | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A | S | A ⁴⁾ | S | A ⁴⁾ |
| — | 1) | — | 1) | — | 1) | — | 1) | — | 1) | — | 1) | — | 1) | — | 1) | — | 1) |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| S | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ |
| — | A | — | A ⁴⁾ | — | A | — | A | S | | — | | — | A | — | A | — | |
| — | A | — | A | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | A | — | A ⁴⁾ | S | A ⁴⁾ |
| S | A | S | A ⁴⁾ | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | A | S | A | S | A | S | A | S | A ²⁸⁾ | S | A ²⁸⁾ | S | A | S | A | S | A ⁴⁾ |

Table I.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|---------------------|--|--------------------------|--|---|-----------------|--------------------------|-----------------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference | | | |
| | Class of contribution No. of units | Convention, etc. | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Geneva (1973) | | | |
| | | | | | | Telegraph Regulations | | Telephone Regulations | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Oman (Sultanate of) | ½ | S ¹⁾ | 24. II. 1977 ⁵³⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Uganda (Republic of) | ½ | S ¹⁾ | | — | | S | | S | |
| Pakistan (Islamic Republic of) ⁵²⁾ | 2 | S ¹⁾ | 26. IX. 1977 | — | | S | A | S | A |
| Panama (Republic of) | ½ | S ¹⁾ | 15. I. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Papua New Guinea | ½ | A | 31. X. 1975 ³¹⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Paraguay (Republic of) | ½ | S | 2. VIII. 1976 | A | 2. VIII. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Netherlands (Kingdom of the) | 10 | S ¹⁾ | 31. XII. 1974 ¹⁹⁾ | S | 17. IV. 1975 | S | A | S | A |
| Peru | ½ | S ¹⁾ | | S | | S | ¹⁾ | S | ¹⁾ |
| Philippines (Republic of the) | 1 | S ¹⁾ | 13. VIII. 1975 | S | | S | A | S | A |
| Poland (People's Republic of) | 3 | S ¹⁾ | 13. I. 1977 ⁴⁷⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Portugal. | ½ | A | 12. XI. 1975 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Qatar (State of) | ½ | A | 24. X. 1975 | A | 24. X. 1975 | — | A ⁴⁾ | — | A ⁴⁾ |
| Syrian Arab Republic | ½ | A | 20. II. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| German Democratic Republic | 3 | S ¹⁾ | 25. VIII. 1976 ²⁾ | — | | S | A | S | A |
| Democratic People's Republic of Korea | ½ | A | 24. IX. 1975 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Ukrainian Soviet Socialist Republic . . . | 3 | S ¹⁾ | 6. I. 1977 ⁴⁶⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Roumania (Socialist Republic of) | 1 | S ¹⁾ | 8. II. 1977 ⁵⁰⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| United Kingdom of Great Britain and Northern Ireland | 30 | S ¹⁾ | 31. XII. 1974 ²²⁾ | S | 31. XII. 1974 ²²⁾ | S | A | S | A |
| Rwanda (Republic of) | ½ | S ¹⁾ | 23. XII. 1976 | — | | — | A | — | A |
| San Marino (Republic of) | ½ | A | 25. III. 1977 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Sao Tome and Principe (Democratic Republic of) | ½ | A | 1. IX. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Senegal (Republic of the) | 1 | S ¹⁾ | 21. I. 1977 | S | 5. V. 1977 | S | A ⁴⁾ | S | A ⁴⁾ |
| Sierra Leone | ½ | S ¹⁾ | 25. XI. 1976 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Singapore (Republic of) | 1 | S ¹⁾ | 16. IX. 1974 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Somali Democratic Republic | ½ | S ¹⁾ | 11. II. 1977 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Sudan (Democratic Republic of the) . . . | 1 | S ¹⁾ | | — | | S | | S | |

^{*)} Convention, Final Protocol, Additional Protocols.
^{**)} Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations (continued)

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|--|----|---|----|---|----|--|----|---|----|----------------------------|---|-----------------|---|-----------------|----|------------------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | S | A | — | A | — | A | S | | — | A | — | A ⁴⁾ | — | A | — | A |
| S | A ³⁾ | S | A ³⁾ | S | A | S | A ³⁾ | S | A ³⁾ | S | A ⁴⁾ | S | A | S | A ³⁾ | S | A ⁴⁾ |
| — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A | — | A ⁴⁾ | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| S | A | — | A | — | A | — | A | S | A ⁴⁾ | S | A ⁴⁾ | S | A | — | A | S | A ⁴⁾ |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| S | ¹⁾ | — | ¹⁾ | — | ¹⁾ | — | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | — | ¹⁾ | S | ¹⁾ |
| S | A ⁴⁾ | S | A | — | A | — | A | S | A | S | | S | A ⁴⁾ | — | A | S | |
| S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ | S | ¹⁾ |
| S | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | — | | S | A | S | A ⁴⁾ | — | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | ¹⁾ | — | ¹⁾ | — | ¹⁾ | — | ¹⁾ | — | ¹⁾ | S | A | — | ¹⁾ | — | ¹⁾ | S | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ | — | |
| S | ¹⁾ | S | A | — | A ¹³⁾ | — | ¹⁾ | S | A | — | ¹⁾ | S | ¹⁾ | — | ¹⁾ | — | ¹⁾ |
| S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ | S | A ⁴⁾ |
| S | A | S | A | S | A | S | A | S | A | S | A ³²⁾ | S | A | S | A | S | A ³²⁾ |
| — | A ⁴⁾ | — | A | — | A | — | A | S | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| — | A | — | A | — | A | S | A | S | A ⁴⁾ | S | A ⁴⁾ | — | A | S | A | S | A ⁴⁾ |
| — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A | — | A ⁴⁾ |
| — | A ⁴⁾ | — | A ⁴⁾ | S | A ³⁾ | S | A ³⁾ | S | A ³⁾ | S | A | — | A ⁴⁾ | S | A ³⁾ | S | A |
| — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ |
| S | A | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | A ⁴⁾ | — | | S | A | — | A ⁴⁾ | — | |

Table I.

| Countries (In the alphabetical order of the French version of the country names) | CONVENTION, etc. | | | | | ADMINISTRATIVE REGULATIONS | | | |
|--|---|-----------------------|--|--------------------------|--|---|-----------------|--------------------------|-----------------|
| | Plenipotentiary Conference of Malaga-Torremolinos, 1973 | | | | | World Administrative Telegraph and Telephone Conference | | | |
| | Class of contribution No. of units | Convention, etc. * | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Opt. Add. Protocol ** | Date on which the instrument of ratification or accession was deposited with the General Secretariat | Geneva (1973) | | | |
| | | | | | | Telegraph Regulations | | Telephone Regulations | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Sri Lanka (Ceylon) (Republic of) | ½ | S ¹⁾ | | S | | — | | — | |
| South Africa (Republic of) | 8 | A | 23. XII. 1974 ³³⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Sweden | 10 | S ¹⁾ | 29. XII. 1976 | A | 29. XII. 1976 | S | A | S | A |
| Switzerland (Confederation of) | 10 | S ¹⁾ | 28. IV. 1976 | S | 28. IV. 1976 | S | A ⁴⁾ | S | A ⁴⁾ |
| Surinam (Republic of) | ½ | A | 15. VII. 1976 | A | 22. VII. 1976 | — | A ⁴⁾ | — | A ⁴⁾ |
| Swaziland (Kingdom of) | ½ | A | 20. I. 1975 ²⁹⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Tanzania (United Republic of) | ½ | S ¹⁾ | 2. IX. 1975 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Chad (Republic of the) | ½ | S ¹⁾ | | S | | — | | — | |
| Czechoslovak Socialist Republic. | 3 | S ¹⁾ | 20. VII. 1976 ³⁸⁾ | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Thailand | 1½ | S ¹⁾ | 8. X. 1975 ²⁾ | S | 28. IX. 1976 | S | A | S | A |
| Togolese Republic | ½ | S ¹⁾ | 31. III. 1977 | S | 31. III. 1977 | S | A ⁴⁾ | S | A ⁴⁾ |
| Tonga (Kingdom of) | ½ | A | 22. VIII. 1977 ⁶⁴⁾ | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Trinidad and Tobago | 1 | S ¹⁾ | 13. III. 1975 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Tunisia | 2 | S ¹⁾ | 25. IV. 1975 | S | | S | A ⁴⁾ | S | A ⁴⁾ |
| Turkey | 2 | S ¹⁾ | | — | | S | | S | |
| Union of Soviet Socialist Republics | 30 | S ¹⁾ | 31. XII. 1976 ⁴⁴⁾ | — | | S | A | S | A |
| Uruguay (Oriental Republic of) | ½ | S ¹⁾ | 15. XII. 1977 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Venezuela (Republic of) | 3 | S | 2. XI. 1976 | — | | — | A ⁴⁾ | — | A ⁴⁾ |
| Viet Nam (Socialist Republic of) ³⁹⁾ . . . | ½ | S | 16. XII. 1976 | — | | S | A ⁴⁾ | S | A ⁴⁾ |
| Yemen Arab Republic | ½ | S ¹⁾ | | S | | — | | — | |
| Yemen (People's Democratic Republic of) | ½ | S ¹⁾ | | S | | — | | — | |
| Yugoslavia (Socialist Federal Republic of) | 1 | S ¹⁾ | 22. IX. 1975 | — | | S | A | S | A |
| Zaire (Republic of) | 1 | S | 10. XII. 1976 | S | | — | A ⁴⁾ | — | A ⁴⁾ |
| Zambia (Republic of) | ½ | S | | — | | — | | — | |

¹⁾ Convention, Final Protocol, Additional Protocols.
²⁹⁾ Optional Additional Protocol on the Compulsory Settlement of Disputes.

Convention, Regulations (end)

| ADMINISTRATIVE REGULATIONS | | | | | | | | | | | | | | | | | |
|----------------------------------|------|--|------|---|-------|---|------|--|------|---|------|------------------------------|------|---|------|---|------|
| Administrative Radio Conferences | | | | | | | | | | | | | | | | | |
| Radio Regulations | | | | | | | | | | | | Additional Radio Regulations | | | | | |
| A.R.C. Geneva (1959) | | Partial Revision E.A.R.C. Geneva (1963) (space) | | Partial Revision E.A.R.C. Geneva (1966) (aeronautical) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1971) (space-2) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | | A.R.C. Geneva (1959) | | Partial Revision W.A.R.C. Geneva (1967) (maritime) | | Partial Revision W.A.R.C. Geneva (1974) (maritime-2) | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| S | A 4) | — | A 4) | — | A | S | A | S | | S | | S | A 4) | S | A | S | |
| S | A | S | A | S | A | S | A | S | A | — | | S | A | S | A | — | |
| S | A | S | A | S | A | S | A | S | A | S | A 3) | S | A | S | A | S | A 3) |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | A 4) | — | A 4) | — | |
| — | A 4) | S | A | — | A | — | A | S | A 4) | S | A | — | A 4) | — | A | S | A |
| — | A | — | A | — | A 4) | S | | — | | — | | — | A | S | | — | |
| S | 38) | S | 38) | S | 38) | S | 38) | S | 38) | S | 38) | S | 38) | S | 38) | S | 38) |
| S | A | — | A | S | A 4) | — | A 4) | S | A | S | A | S | A | — | A 4) | S | A |
| — | A 4) | — | A | — | A 4) | S | A 4) | S | A 4) | S | A 4) | — | A 4) | S | A 4) | S | A 4) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | A 4) | — | A 4) | — | |
| S | A | — | A | — | A 4) | S | A 4) | S | A 4) | S | | S | A | S | A 4) | S | |
| 1) | A 4) | — | A 4) | — | A 4) | S | | S | | S | | S | A 4) | S | | S | |
| S | 44) | S | A | S | A 13) | S | 44) | S | A | S | 44) | S | 44) | S | 44) | S | 44) |
| S | A 4) | — | A 4) | — | A 4) | — | A 4) | S | A 4) | — | A 4) | S | A 4) | — | A 4) | — | A 4) |
| S | A 4) | — | A 4) | S | A 4) | S | A 4) | S | A | S | A 4) | S | A 4) | S | A 4) | S | A 4) |
| — | A | — | A | — | A 4) | S | A 4) | S | A 4) | S | A 4) | — | A | S | A 4) | S | A 4) |
| — | A 4) | — | A 4) | — | A 4) | — | A 4) | — | | — | | — | A 4) | — | A 4) | — | |
| — | A 4) | — | A 4) | — | A 4) | — | | — | | — | | — | A 4) | — | | — | |
| S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A | S | A |
| — | A 4) | S | A | S | A 4) | — | A 4) | S | A 4) | — | A 4) | — | A 4) | — | A 4) | — | A 4) |
| — | A 4) | — | A | — | A 4) | — | | — | | — | | — | A 4) | — | | — | |

1) See the statement or statements appearing in the Final Protocol annexed to the International Telecommunication Convention (Malaga-Torremolinos, 1973).

2) In ratifying the Convention, the country concerned confirmed the reservation(s) made at the time of signature.

3) This approval was given subject to the reservation(s) made at the time of signature.

4) Regulations approved *ipso facto*, since they were in force when the country concerned acceded to the International Telecommunication Convention (Geneva, 1959) or ratified or acceded to the International Telecommunication Convention of Montreux, 1965 or to that of Malaga-Torremolinos, 1973.

5) See Notification No. 1088.

6) See Notifications Nos. 855, 876 and 880.

7) See Notification No. 977.

8) See Notifications Nos. 1023, 1024, 1034, 1035 and 1036.

9) See Notification No. 1063.

10) See Notifications Nos. 1097, 1111, 1116 and 1118.

11) In acceding to the Convention, the State of Bahrain has made the following reservations:

"1. The State of Bahrain wishes to reserve the right of its Government to take such action as it may consider necessary to protect its interests, should Members or Associated Members in any way fail to comply with the requirements of the International Telecommunication Convention (Torremolinos, 1973) or should the reservations made by such Members jeopardize its telecommunication services or lead to an increase in Bahrain's share in defraying the expenses of the Union.

2. The accession of the State of Bahrain to the International Telecommunication Convention (Torremolinos, 1973) shall in no way imply recognition of the Member appearing in Annex I to the said Convention under the name of "Israel".

Further to the above statement, the General Secretariat has received, from the Government of Israel, a note the text of which has been published in Notification No. 1087.

12) Formerly: Dahomey (Republic of).

13) See Notifications Nos. 1004 and 1013.

14) Formerly: Burma (Union of).

15) See Notification No. 1000.

16) See Notification No. 1019.

17) See Notification No. 911.

18) In approving the Radio Regulations, the Republic of the Ivory Coast, referring to Article 9 of the Regulations and to the procedure defined in Article 10, reserved the right to take any measures necessary for the development and proper operation of its broadcasting service, should the procedure in question fail to give it satisfaction. (Notification No. 908).

19) The Government of the Kingdom of the Netherlands declared that the Convention was ratified on behalf of the Kingdom in Europe, of Surinam *) and of the Netherlands Antilles.

*) Surinam is now an independent State, Member of the ITU.

20) In approving this partial Revision of the Radio Regulations, the Government of Jamaica reaffirmed the reservation entered by its delegation at the ninth Plenary Meeting of the Conference, i.e.:

"The Jamaican Delegation declares that it reserves the right of the Jamaican Government to take any action it deems necessary to safeguard its interests, should Members or Associate Members in any way fail to comply with the requirements of the Radio Regulations of the Administrative Radio Conference, Geneva, 1959, as added to and amended by the Extraordinary Administrative Radio Conference, Geneva, 1963, or should reservations by other countries jeopardize its telecommunication services."

21) The Italian Administration declared that Italy, by ratifying the International Telecommunication Convention (Geneva, 1959) on 7 November 1962 (the instrument of ratification being deposited with the General Secretariat on 28 December 1962), had, in accordance with No. 193 of the Convention, approved *ipso facto* the Radio Regulations (Geneva, 1959) which came into force on 1 May 1961.

22) In ratifying the Convention and the Optional Additional Protocol, the Government of the United Kingdom has declared that the instrument of ratification is in respect of the United Kingdom of Great Britain and Northern Ireland, the Associated States (Antigua, Dominica, Saint Christopher-Nevis-Anguilla, Saint Lucia and Saint Vincent) and Territories under the territorial sovereignty of the United Kingdom, as well as the State of Brunei, the Solomon Islands and, within the limits of United Kingdom jurisdiction therein, the Condominium of the New Hebrides.

The Government of the United Kingdom has also declared that the provisions of the Convention and of the Optional Additional Protocol shall not apply to Southern Rhodesia unless and until the Government of the United Kingdom inform the Secretary-General that they are in a position to ensure that the obligations imposed by the Convention and the Optional Additional Protocol, in respect of that territory can be fully implemented.

23) In ratifying the Convention, the Government of the Hungarian People's Republic confirmed statements Nos. XV, L and XCI contained in the Final Protocol to the Convention. It also confirmed some of the statements appearing in the Additional Protocol to the Radio Regulations (Geneva, 1959), in the following terms:

"The Government of the Hungarian People's Republic, while approving the Regulations, reserves the right to use on its territory for the aeronautical radionavigation service:

— the frequency bands allocated to the "radiolocation" and "aeronautical radionavigation" services mentioned in Article 5 of the Radio Regulations (Geneva, 1959),
— the frequency band 415-490 kHz.

The Government of the Hungarian People's Republic accepts the use of the broadcasting schedules in the broadcasting frequency bands 5 950-26 100 kHz mentioned in Article 5 of the Radio Regulations (Geneva, 1959) only in so far as they facilitate the preparation of the final frequency allocation plan for the bands concerned."

24) In approving these Regulations, the Argentine Government declared that the Argentine Administration, in its relations with other Administrations, will not accept any provisions or obligations of the said Radio Regulations, its Appendices and Resolutions or the Additional Radio Regulations which the corresponding Administrations have not accepted or have accepted subject to reservations.

25) In a note the United States Embassy in Berne declared that "the deposit of the instrument of ratification of the Radio Regulations (Geneva, 1959) and Additional Protocol thereto, constitutes notifications of approval by the United States of America, including all territories under the jurisdiction of the United States of America." (Notification No. 878.)

26) Formerly: Malta.

27) In acceding to the Convention, the Government of the Republic of Malta has reserved the right to take such action as it may consider necessary to protect its interests, should Members in any way fail to comply with the requirements of the Convention, Annexes, Protocols etc., or should the reservations made by such Members jeopardize its telecommunication services or lead to an increase in Malta's share in defraying the expenses of the Union.

28) The Government of New Zealand has announced that this approbation also applies to the Cook Islands, Niue and the Tokelau Islands.

29) In acceding to the Convention, the Government of the Kingdom of Swaziland confirmed the statement contained in No. II of the Final Protocol to the aforementioned Convention.

30) In acceding to the Convention, the Government of the Commonwealth of the Bahamas has reserved the right not to accept any financial measure which might lead to an increase in its contributory share to defraying the expenses of the Union, and the right to take such action as it may consider necessary to safeguard its interests should certain Members not share in defraying the expenses of the Union, or should they fail in any other way to comply with the requirements of the Convention or its Annexes or the Protocols attached thereto or should reservations by other countries jeopardize the telecommunication services of the Commonwealth of the Bahamas.

31) In acceding to the Convention, the Government of Papua New Guinea has reserved the right to take such action as it may consider necessary to safeguard its interest should certain Members not share in defraying the expenses of the Union, or should they fail in any other way to comply with the requirements of the Convention or its Annexes or the Protocols attached thereto, or should reservations by other countries jeopardize their telecommunication services.

32) The approval is in respect of the United Kingdom of Great Britain and Northern Ireland, the Associate States (Antigua, Dominica, St. Christopher-Nevis-Anguilla, St. Lucia and St. Vincent) and Territories under the territorial sovereignty of the United Kingdom, as well as the State of Brunei, the Solomon Islands and, within the limits of jurisdiction therein, the Condominium of the New Hebrides.

33) The Government of the Republic of South Africa has acceded to the Convention subject to the proviso that it will reserve to itself the right to take any action it may deem necessary to protect its interests, should other Members of the Union in any way fail to comply with the obligations under the International Telecommunication Convention (Torremolinos, 1973) in respect of South Africa.

34) Formerly: Laos (Kingdom of).

35) Formerly: Malagasy Republic.

36) In acceding to the Convention, the Government of the People's Republic of Albania has made the following statement and declarations (translation):

The Government of the People's Republic of Albania declares that it does not recognize the legality of the credentials of the representatives of Seoul, who do not represent the people of Korea.

The Government of the People's Republic of Albania reserves the right to accept or not to accept the Radio Regulations, in whole or in part.

The Government of the People's Republic of Albania reserves the right to take any measures it deems necessary to safeguard its interest should reservations made by other countries lead to an increase in its contributory share in defraying the expenses of the Union or should any Members of the Union fail to pay their share of those expenses

37) See Notification No. 1109.

38) In ratifying the Convention, the Government of the Czechoslovak Socialist Republic confirmed the following reservations and declarations made when the Final Protocol was signed: Last paragraph of No. XV and Nos. XLIX, L and CI.

39) On 2 November 1976 the General Secretariat received, by diplomatic channel and through the intermediary of the Swiss Government, a letter dated 20 July 1976 in which the Minister of Foreign Affairs of the Socialist Republic of Viet Nam declares that State to be the continuator of the Republic of South Viet Nam so far as membership of the International Telecommunication Union is concerned. Therefore, the Socialist Republic of Viet Nam is a Member of the ITU.

40) Formerly: Albania (People's Republic of).

41) Formerly: Central African Republic.

42) In ratifying the Convention, the Government of the People's Republic of China confirmed the statement contained in paragraph 2 of No. LIX of the Final Protocol to the aforementioned Convention.

43) In ratifying the Convention, the Government of the People's Republic of Bulgaria confirmed the statement contained in No. XLIX of the Final Protocol to the aforementioned Convention.

44) In ratifying the Convention, the Government of the Union of Soviet Socialist Republics confirmed the statement contained in No. XLIX of the Final Protocol to the aforementioned Convention.

45) In ratifying the Convention, the Government of the Byelorussian Soviet Socialist Republic confirmed the statement contained in No. XLIX of the Final Protocol to the aforementioned Convention.

46) In ratifying the Convention, the Government of the Ukrainian Soviet Socialist Republic confirmed the statement contained in No. XLIX of the Final Protocol to the aforementioned Convention.

47) In ratifying the Convention, the Government of the People's Republic of Poland confirmed the statement contained in No. XLIX of the Final Protocol to the aforementioned Convention.

48) In ratifying the Convention, the Government of the Argentine Republic confirmed the statements contained in Nos. LXXXIV and LXXXVII of the Final Protocol to the aforementioned Convention and declared that it did not accept the statement made by the United Kingdom of Great Britain and Northern Ireland and shown in No. CII (B) of the said Final Protocol.

49) In ratifying the Convention, the Government of Chile confirmed the reservation contained in No. VIII of the Final Protocol to the aforementioned Convention and made the following declaration: (*translation*) "The Government of the Republic of Chile is ratifying the Convention of Malaga-Torremolinos, 1973, on the understanding that the ITU would determine as soon as possible how to enforce the sovereign right of each

country to ensure that no unwanted broadcast originating in another State was imposed upon it."

50) In ratifying the Convention, the Government of the Socialist Republic of Roumania confirmed the statements contained in Nos. XCI and CIV of the Final Protocol to the aforementioned Convention and furthermore, declared that in conformity with Article 42, paragraph 2, of the Convention, ratification involves acceptance of the Administrative Regulations in force at the time of ratification by the Socialist Republic of Roumania.

51) Formerly: Guatemala.

52) Formerly: Pakistan.

53) In ratifying the Convention, the Government of the Sultanate of Oman confirmed the statement contained in No. XXXVII of the Final Protocol to the aforementioned Convention and declared that it shall not accept any financial consequences which might lead to an increase in its contributory share in defraying the expenses of the Union that might arise as a result of reservations made by other Governments who took part in the Plenipotentiary Conference, Malaga-Torremolinos, 1973.

54) In ratifying the Convention, the Government of the Republic of Iraq confirmed the statement contained in No. XXXVII of the Final Protocol to the aforementioned Convention.

55) Formerly: Libyan Arab Republic.

56) In acceding to the Convention, the Government of the Kingdom of Tonga has reserved the right not to accept any financial measure which might lead to an increase in its contributory share to defraying the expenses of the Union, and the right to take such action as it may consider necessary to safeguard its interests should certain Members not share in defraying the expenses of the Union, or should they fail in any other way to comply with the requirements of the Convention or the Protocols attached thereto or should reservations by other countries jeopardize the telecommunication services of the Kingdom of Tonga.

57) Formerly: Khmer Republic.

Table II. African Regional Agreements

Cols. 2 and 3: Regional Agreement for the African Broadcasting Area concerning the use of frequencies by the broadcasting service in the very high frequency and ultra high frequency bands (Geneva, 1963);

Cols. 4 and 5: Regional Agreement concerning the use of frequencies by the broadcasting service in the medium frequency band in the African Broadcasting Area (Geneva, 1966).

The letter S means that the Agreement has been signed and the letter A means approval of the Agreement or accession to it.

| Country | Broadcasting Agreement VHF/UHF (Geneva, 1963) | | Broadcasting Agreement MF (Geneva, 1966) | |
|--|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 |
| Algeria (Algerian Democratic and Popular Republic) | — | | S | |
| Benin (People's Rep. of) | S | | S | |
| Burundi (Republic of) | — | | S | |
| Cameroon (United Republic of) | S | | S | |
| Central African Empire | — | | S | |
| Congo (People's Rep. of the) | S | | S | |
| Ivory Coast (Republic of the) | S | | S | |
| Egypt (Arab Republic of) | — | A | S | A |
| Spain ¹⁾ | S | A | S | |
| Ethiopia | S | A | S | |
| France ²⁾ | S | A | S | |
| Gabon Republic | S | | S | A |
| Ghana | S | | S | |
| Guinea (Republic of) | S | | S | |
| Upper Volta (Republic of) | S | | S | |
| Kenya (Republic of) | S | A | S | A |
| Liberia (Republic of) | S | | S | |
| Libya (Socialist People's Libyan Arab Jamahiriya) | S | | — | |

| Country | Broadcasting Agreement VHF/UHF (Geneva, 1963) | | Broadcasting Agreement MF (Geneva, 1966) | |
|--|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 |
| Madagascar (Dem. Rep. of) | S | | S | |
| Malawi | — | | S | |
| Mali (Republic of) | S | | S | |
| Morocco (Kingdom of) | — | | S | |
| Mauritania (Islamic Republic of) | S | | S | |
| Niger (Republic of the) | S | | S | |
| Nigeria (Federal Republic of) | S | A | S | |
| Uganda (Republic of) | S | A | S | A |
| United Kingdom of Great Britain and Northern Ireland ³⁾ | S | | S | A |
| Rwanda (Republic of) | S | | S | |
| Senegal (Republic of the) | S | A | S | |
| Sierra Leone | S | A | — | |
| Somali Democratic Republic | S | | — | |
| South Africa (Republic of) | S | A | — | |
| Tanzania (United Republic of) | S | A | S | A |
| Chad (Republic of the) | S | | S | |
| Togolese Republic | S | | S | |
| Zaire (Republic of) | S | | S | |
| Zambia (Republic of) | — | | S | A |

¹⁾ With respect to the Canarias.

²⁾ With respect to the Department of Reunion.

³⁾ On behalf of the Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible.

Note: The Agreement of Geneva, 1963, was also signed on behalf of the Federation of Rhodesia and Nyasaland.

Table III. American Regional Agreements

The letter S means that the Agreement has been signed; the letter R means that the Agreement has been ratified; the letter A means acceptance of the Agreement or accession thereto.

| Country | Inter-American Radio Agreement (FIAR) (Washington, 1949) | | North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950) | |
|---|--|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| Argentine Republic | S | | — | |
| Bolivia (Republic of) | S | | — | |
| Brazil (Federative Republic of) | S | | — | |
| Canada | S | | S | R |
| Chile | S | | — | |
| Colombia (Republic of) | S | | — | |
| Costa Rica | S | A | — | |
| Cuba | S | | S | R |
| Dominican Republic | S | A | S | R |
| El Salvador (Republic of) | S | | — | |
| Ecuador | S | | — | |
| United States of America | S | A | S | R |

| Country | Inter-American Radio Agreement (FIAR) (Washington, 1949) | | North-American Regional Broadcasting Agreement (NARBA) (Washington, 1950) | |
|--|--|---|---|------|
| 1 | 2 | 3 | 4 | 5 |
| Guatemala (Republic of) | S | | — | |
| Haiti (Republic of) | — | A | — | |
| Honduras (Republic of) | S | A | — | |
| Mexico | S | A | — | |
| Nicaragua | S | A | — | |
| Panama (Republic of) | S | | — | |
| Paraguay (Republic of) | — | A | — | |
| United Kingdom of Great Britain and Northern Ireland | — | | S*) | R**) |
| Uruguay (Oriental Republic of) | S | | — | |
| Venezuela (Republic of) | S | | — | |

*) For the Territories in the North-American Region (the Bahamas and Jamaica).

**) For the Bahamas only.

Table IV. European Regional Conventions, Arrangements and Agreements

The letter S means that the Convention, Agreement or Arrangement has been signed; the letter R means that the Convention has been ratified; the letter A means that the Agreement has been approved or acceded to; in column 7, it means that the Agreement has been approved.

| Country | European Broadcasting Convention (Copenhagen, 1948) | | European Regional Convention for the maritime mobile radio service (Copenhagen, 1948) | | Regional Arrangement concerning Maritime Radiobeacons in the European Area of Region 1 (Paris, 1951) | | Regional Agreement in the bands 68-73 MHz and 76-87.5 MHz (Geneva, 1960) *) | | Regional Agreement for the European Broadcasting Area (Stockholm, 1961) | | Regional Arrangement concerning the radio-telephone service for the Rhine (Munich, 1976) | |
|--|---|-----------------|---|---------------|--|---|---|---|---|-----------------|--|------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Albania (Socialist People's Republic of) . . . | S | R | — | — | — | — | S | — | — | — | — | — |
| Germany (Federal Republic of) | — | — | — | — | — | — | S | A | S | A ⁶⁾ | S | A ¹⁰⁾ |
| Austria | — | — | — | — | — | — | S | A | S | A | — | — |
| Belgium | S | R ⁹⁾ | S | R | S | A | — | — | S | A | S | A |
| Byelorussian Soviet Socialist Republic . . . | S | R | — | — | — | — | S | — | S | A ⁵⁾ | — | — |
| Bulgaria (People's Republic of) | S | R | — | ¹⁾ | — | — | S | — | S | — | — | — |
| Cyprus (Republic of) | — | — | — | — | — | — | — | — | S | A | — | — |
| Vatican City State | S | R | — | — | — | — | — | — | S | — | — | — |
| Denmark | S | R | S | R | S | A | S | A | S | — | — | — |
| Spain | — | — | — | — | S | — | — | — | S | A ²⁾ | — | — |
| Finland | S | R | — | — | — | — | — | — | S | A | — | — |
| France | S | R | S | R | S | A | S | A | S | A | S | A |
| Greece | S | R | S | R | — | — | S | — | S | — | — | — |
| Hungarian People's Republic | S | R ⁹⁾ | — | — | — | — | S | A | S | — | — | — |
| Ireland | S | R | S | R | — | A | — | — | S | A | — | — |
| Iceland | — | — | S | R | — | — | — | — | S | — | — | — |
| Israel (State of) | — | — | — | — | — | — | — | — | S | — | — | — |
| Italy | S | R | S | R | S | A | S | A | S | A | — | — |
| Lebanon | — | — | — | — | — | — | — | — | S | — | — | — |
| Luxembourg | — | — | — | — | — | — | — | — | S | — | S | A |
| Morocco (Kingdom of) | S | R | S | R | S | A | — | — | S | A | — | — |
| Monaco | S | R | S | R | S | A | — | — | S | — | — | — |
| Norway | S | R | S | R | S | A | S | A | S | A | — | — |
| Netherlands (Kingdom of the) | S | R | S | R | S | A | — | — | S | A | S | A ¹⁰⁾ |
| Poland (People's Republic of) | S | R | — | — | — | — | S | — | S | — | — | — |
| Portugal | S | — | S | — | S | — | — | — | S | A ⁸⁾ | — | — |
| German Democratic Republic | — | — | — | — | — | — | — | — | — | A ⁵⁾ | — | — |
| Ukrainian Soviet Socialist Republic | S | R | — | — | — | — | S | A | S | — | — | — |
| Roumania (Socialist Republic of) | S | R | — | — | — | — | S | A | S | — | — | — |
| United Kingdom of Great Britain and Northern Ireland | S | R | S | R | S | A | — | — | S ⁷⁾ | A ⁷⁾ | S ⁴⁾ | ¹¹⁾ |
| Sweden | — | — | S | R | S | A | S | A | S | — | — | — |
| Switzerland (Confederation of) | S | R | — | — | — | — | S | A | S | A | S | A |
| Czechoslovak Socialist Republic | S | R | — | — | — | — | S | A | S | — | — | — |
| Tunisia | S | R | S | R | S | A | — | — | — | — | — | — |
| Turkey | — | — | S | — | S | A | S | — | S | — | — | — |
| Union of Soviet Socialist Republics | S | R | — | ³⁾ | — | — | S | A | S | A ⁵⁾ | — | — |
| Yugoslavia (Socialist Federal Republic of) . | S | R | — | — | — | A | S | — | S | A | — | — |

*) Regional Agreement for the use of frequencies in the bands 68-73 MHz and 76-87.5 MHz by the broadcasting service on the one hand and by the fixed and mobile services on the other (Geneva, 1960).

¹⁾ The People's Republic of Bulgaria has given notice that its coast stations use the frequencies assigned to them in the Copenhagen Plan.

²⁾ The Spanish Government has approved this Agreement while maintaining the three reservations which appear in paragraph I (A, B and C) of the Final Protocol.

³⁾ The Union of Soviet Socialist Republics has given notice that its coast stations use the frequencies assigned to them in the Copenhagen Plan.

⁴⁾ As a participating Administration.

⁵⁾ Considering that, when the plans for the assignment of frequencies to television stations in the 645-960 MHz band were established at the Stockholm Conference in 1961, the requirements of the air radionavigation services of the USSR, the Ukrainian SSR and the Byelorussian SSR were not sufficiently taken into consideration, and in view of the special nature of the air radionavigation services, the Telecommunication Administrations of the USSR, the Ukrainian SSR and the Byelorussian SSR cannot assure countries using this range for television of the necessary means to prevent interference from the air radionavigation services of the USSR, the Ukrainian SSR and the Byelorussian SSR.

⁶⁾ In giving its approval, the Administration of the Federal Republic of Germany expressed the following considerations:

"According to the frequency plan for television stations in the frequency band 162-230 MHz (Annex 2, Chapter 2, of the Agreement), the frequencies 224.25/229.75 MHz are assigned to the Sonneberg television station appearing in the plan with an effective radiated power of 30/6 kW and an effective radiated power of 5 kW for the television carrier permitted in the sector between 45 and 135 degrees.

This assignment is capable of causing harmful interference to the aeronautical radionavigation service stations which operate in the frequency band 223-235 MHz in accordance with Article 5 of the Radio Regulations, Geneva, 1959.

Harmful interference to stations operating in the frequency band 223-235 MHz, which is allocated to the aeronautical radionavigation service on a primary basis, can only be avoided if the effective radiated power of the Sonneberg television station does not exceed 0.5/0.1 kW in the sector between 135 and 345 degrees."

⁷⁾ Also signed and approved on behalf of the Overseas Territories for the international relations of which the Government of the United Kingdom are responsible.

⁸⁾ In according to that Agreement, the Government of the German Democratic Republic made the following statement:

"The Ministry of Posts and Telecommunications of the German Democratic Republic joins the delegations of the Byelorussian Soviet Socialist Republic, the People's Republic of Bulgaria, the Hungarian People's Republic, the People's Republic of Poland, the Socialist Republic of Roumania, the Union of Soviet Socialist Republics, the Ukrainian Soviet Socialist Republic and the Czechoslovak Socialist Republic in their statement included in the Final Protocol of the Regional Agreement for the European Broadcasting Area, in keeping with the principles of the Four-Power Agreement of 3 September 1971, to the effect that West Berlin is not a part of the Federal Republic of Germany and may not be governed by it."

⁹⁾ The Government of this country has deposited with the Government of Denmark a letter stating that it accepts the abrogation of the European Broadcasting Convention (Copenhagen, 1948) and the Plan annexed thereto, in accordance with the provisions of Additional Protocol I to the Regional Agreement concerning the use by the broadcasting service of frequencies in the MF bands in Regions 1 and 3 and the LF bands in Region 1 (Geneva, 1975).

¹⁰⁾ With reserves.

¹¹⁾ Participating Administration since 23 December 1976, in accordance with the provisions of Article 9 of the above-mentioned Arrangement.

**Table V. Regional Agreement concerning the use by the broadcasting service
of frequencies in the medium frequency bands in Regions 1 and 3
and in the low frequency bands in Region 1
(Geneva, 1975)**

This Agreement, which will come into force on 23 November 1978, was signed on 22 November 1975 by the delegates of the following Members *):

| | |
|--|-------------------------------------|
| Afghanistan (Republic of) | <i>China (People's Republic of)</i> |
| Algeria (Algerian Democratic and Popular Republic) | Cyprus (Republic of) |
| Germany (Federal Republic of) | Vatican City State |
| Saudi Arabia (Kingdom of) | Congo (People's Republic of the) |
| Australia | Korea (Republic of) |
| Austria | Ivory Coast (Republic of the) |
| Bangladesh (People's Republic of) | Denmark |
| <i>Belgium</i> | Egypt (Arab Republic of) |
| Benin (People's Republic of) | United Arab Emirates |
| Byelorussian Soviet Socialist Republic | <i>Spain</i> |
| Botswana (Republic of) | Ethiopia |
| Bulgaria (People's Republic of) | Fiji |
| Burundi (Republic of) | Finland |
| Cameroon (United Republic of) | France |
| Central African Empire | Gabon Republic |
| | Gambia (Republic of the) |

*) In the alphabetical order of the French version of the country names.

| | |
|---|---|
| Ghana | Norway |
| Greece | <i>New Zealand</i> |
| Guinea (Republic of) | Uganda (Republic of) |
| Upper Volta (Republic of) | Pakistan (Islamic Republic of) |
| <i>Hungarian People's Republic</i> ¹⁾ | Papua New Guinea |
| India (Republic of) | Netherlands (Kingdom of the) |
| Indonesia (Republic of) | Philippines (Republic of the) |
| Iran | Poland (People's Republic of) |
| Ireland | Portugal |
| Iceland | Qatar (State of) |
| Israel (State of) | Syrian Arab Republic |
| Italy | <i>German Democratic Republic</i> |
| Japan | Ukrainian Soviet Socialist Republic |
| Jordan (Hashemite Kingdom of) | Roumania (Socialist Republic of) |
| Kenya (Republic of) | <i>United Kingdom of Great Britain and Northern Ireland</i> ²⁾ |
| Kuwait (State of) | Senegal (Republic of the) |
| Lesotho (Kingdom of) | <i>Singapore (Republic of)</i> |
| Lebanon | Sudan (Democratic Republic of the) |
| Liberia (Republic of) | Sri Lanka (Ceylon) (Republic of) |
| Libya (Socialist People's Libyan Arab Jamahiriya) | <i>Sweden</i> |
| <i>Liechtenstein (Principality of)</i> | Switzerland (Confederation of) |
| <i>Luxembourg</i> | Tanzania (United Republic of) |
| Madagascar (Democratic Republic of) | Chad (Republic of the) |
| Malaysia | Czechoslovak Socialist Republic |
| Malawi | Thailand |
| Mali (Republic of) | Togolese Republic |
| Morocco (Kingdom of) | Tunisia |
| Mauritius | Turkey |
| Mauritania (Islamic Republic of) | Union of Soviet Socialist Republics |
| Monaco | Yemen Arab Republic |
| Mongolian People's Republic | Yemen (People's Democratic Republic of) |
| Mozambique (People's Republic of) | Yugoslavia (Socialist Federal Republic of) |
| Nepal | Zaire (Republic of) |
| Niger (Republic of the) | Zambia (Republic of) |
| Nigeria (Federal Republic of) | |

The Members mentioned in italics have notified their approval of the Agreement.

Accessions

The following Members have acceded to the Agreement: State of Bahrain, Sultanate of Oman and Sierra Leone.

¹⁾ In approving the Agreement, the Member concerned confirmed the statement made at the time of signature.

²⁾ This approval is also in respect of the Territories under the territorial sovereignty of the United Kingdom in Regions 1 and 3, as well as the State of Brunei, the Solomon Islands and, within the limits of jurisdiction therein, the Condominium of the New Hebrides.

**Table VI. Final Acts of the World Administrative Radio Conference
for the Planning of the Broadcasting-Satellite Service
in Frequency Bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1)
(Geneva, 1977)**

These Final Acts, which will come into force on 1 January 1979, were signed on 13 February 1977 by the delegates of the following Members *):

| | |
|--|---|
| Afghanistan (Republic of) | Ghana |
| Algeria (Algerian Democratic and Popular Republic) | Greece |
| Germany (Federal Republic of) | Guatemala (Republic of) |
| Saudi Arabia (Kingdom of) | Guinea (Republic of) |
| Argentine Republic | Haiti (Republic of) |
| Australia | Upper Volta (Republic of) |
| Austria | Hungarian People's Republic |
| Bahrain (State of) | India (Republic of) |
| Bangladesh (People's Republic of) | Indonesia (Republic of) |
| Belgium | Iran |
| Benin (People's Republic of) | Ireland |
| Byelorussian Soviet Socialist Republic | Iceland |
| Bolivia (Republic of) | Italy |
| Brazil (Federative Republic of) | Japan |
| Bulgaria (People's Republic of) | Kenya (Republic of) |
| Burundi (Republic of) | Kuwait (State of) |
| Canada | Lao People's Democratic Republic |
| Central African Empire | Lebanon |
| Chile | Libya (Socialist People's Libyan Arab Jamahiriya) |
| China (People's Republic of) | <i>Liechtenstein (Principality of)</i> |
| Cyprus (Republic of) | Luxembourg |
| Vatican City State | Madagascar (Democratic Republic of) |
| Colombia (Republic of) | Malaysia |
| Comoros (State of the) | Mali (Republic of) |
| Congo (People's Republic of the) | Malta (Republic of) |
| Korea (Republic of) | Morocco (Kingdom of) |
| Ivory Coast (Republic of the) | Mauritius |
| Cuba | Mauritania (Islamic Republic of) |
| Denmark | Mexico |
| Egypt (Arab Republic of) | Monaco |
| United Arab Emirates | Mongolian People's Republic |
| Ecuador | Nigeria (Federal Republic of) |
| Spain | Norway |
| United States of America | New Zealand |
| Ethiopia | Oman (Sultanate of) |
| Finland | Uganda (Republic of) |
| France | Pakistan (Islamic Republic of) |
| Gabon Republic | Panama (Republic of) |
| | Papua New Guinea |

*) In the alphabetical order of the French version of the country names.

| | |
|--|--|
| Paraguay (Republic of) | Switzerland (Confederation of) |
| Netherlands (Kingdom of the) | Tanzania (United Republic of) |
| Philippines (Republic of the) | Chad (Republic of the) |
| Poland (People's Republic of) | Czechoslovak Socialist Republic |
| Portugal | Thailand |
| German Democratic Republic | Togolese Republic |
| Democratic People's Republic of Korea | Tunisia |
| Ukrainian Soviet Socialist Republic | Turkey |
| Roumania (Socialist Republic of) | Union of Soviet Socialist Republics |
| United Kingdom of Great Britain and Northern Ireland | Uruguay (Oriental Republic of) |
| Senegal (Republic of the) | Venezuela (Republic of) |
| <i>Singapore (Republic of)</i> | Yemen Arab Republic |
| Sudan (Democratic Republic of the) | Yemen (People's Democratic Republic of) |
| Sweden | Yugoslavia (Socialist Federal Republic of) |
| | Zaire (Republic of) |

The Members mentioned in italics, as well as the State of Qatar, have notified their approval of the Final Acts.

VII. Special Agreements

Special Regional Agreement concerning the use of the 100-104 MHz band by the broadcasting service (1962)

This Agreement was concluded between the following Administrations: Austria, *Italy*, *Switzerland* (*Confederation of*), *Yugoslavia* (*Socialist Federal Republic of*).

The countries mentioned in italics have approved the Agreement.

Note by the General Secretariat: this Agreement will be terminated by mutual consent when these Administrations have approved the Special Agreement concerning the introduction of the Broadcasting Service in the frequency band 100-104 MHz (Darmstadt, 1971).

Special Agreement for use of the 582-606 MHz band for radionavigation purposes (Brussels, 1962)

This Agreement was concluded between the following Administrations: Germany (Federal Republic of), Belgium, Denmark, France, Netherlands (Kingdom of the), United Kingdom of Great Britain and Northern Ireland and Switzerland (Confederation of).

Special Agreement in connection with the use of VHF and UHF in fixed and mobile services in frontier areas (Brussels, 1963)

This Agreement was concluded between the following Administrations: Germany (Federal Republic of), Belgium and Netherlands (Kingdom of the).

By letter dated 6 June 1974, the Administration of Belgium announced that the Administration of Luxembourg has acceded to this Agreement.

Special Agreement concerning the use of frequencies for additional low-power television transmitters operating in the ultra high-frequency range (Band IV, 472-582 MHz and Band V, 582-960 MHz) in the frontier areas (Karlsruhe, 1966)

This Agreement was concluded between the following Administrations: Germany (Federal Republic of), Austria, Belgium, France, Italy, Luxembourg, and Kingdom of the Netherlands.

This Agreement was approved without reservation by all these Administrations

**Special Agreements concerning the coordinated use of frequencies
between 29.7 and 470 MHz by the fixed and land mobile services**

One such Agreement was signed at Vienna on 18 July 1969 by the following Administrations: Germany (Federal Republic of), Austria, Italy and Confederation of Switzerland.

This Agreement, which was approved without reservation by these Administrations, came into force on 1 December 1969.

Another such Agreement was signed at Vienna on 25 April 1969 by the following Administrations: Austria, Hungarian People's Republic and Czechoslovak Socialist Republic.

This Agreement, which was approved without reservation by these Administrations, came into force on 1 January 1970.

A third such Agreement was signed at Budapest on 1 July 1976 by the following Administrations: Hungarian People's Republic and Socialist Federal Republic of Yugoslavia.

This Agreement became effective sixty days after signing.

**Special Agreement concerning the coordinated use of frequencies
between 29.7 and 960 MHz by the fixed and land mobile services**

One such Agreement was signed at Vienna on 23 September 1976 by the following Administrations: Austria and Socialist Federal Republic of Yugoslavia.

This Agreement, which was approved without reservations by these Administrations, came into force on 1 January 1977.

**Special Agreement Concerning the Introduction
of the Broadcasting Service in the Frequency Band 100-104 MHz (Darmstadt, 1971)**

This Agreement was concluded between the following Administrations: *Germany (Federal Republic of)*, Austria, *Belgium*, Denmark, Spain, Finland, *France*, Hungarian People's Republic, Italy, *Luxembourg*, Norway, *Kingdom of the Netherlands*, *United Kingdom of Great Britain and Northern Ireland*, Sweden, *Confédération of Switzerland* and Socialist Federal Republic of Yugoslavia.

This Agreement came into force on 1 January 1973.

The countries mentioned in italics have approved the Agreement.

Governmental Agreement concerning Posts and Telecommunications

One such Agreement was signed in Bonn on 30 March 1976 between the Government of the Federal Republic of Germany and the Government of the German Democratic Republic.

At the same time three administrative Agreements (concerning postal traffic, telecommunication traffic, and accounting for postal and telecommunication transit facilities) relating to that governmental Agreement were concluded between the Administrations of both countries.

All of these Agreements, which are special arrangements concluded in application of Article 31 of the Convention of Malaga-Torremolinos, 1973, came into force on 1 July 1976.

ANNEX 2 A

BUDGET FOR 1977

SUMMARY OF ESTIMATED EXPENDITURE FOR 1977

| EXPENDITURE | Expenditure 1976 Swiss francs | Budget 1977 Swiss francs | Additional credits cf. Res. 647 Swiss francs | Budget 1977 including add. credits Swiss francs |
|--|-------------------------------------|--------------------------------|---|--|
| I. BUDGET OF THE UNION | | | | |
| Section 1 – Administrative Council | 734,489 | 733,000 | 7,700 | 740,700 |
| Common Headquarters expenditure : | | | | |
| Section 2 – Staff | 32,542,435 | 33,123,000 | 866,600 | 33,989,600 |
| Section 3 – Social Security | 6,659,286 | 7,296,000 | 178,000 | 7,474,000 |
| Section 4 – Premises | 2,744,812 | 2,796,000 | – | 2,796,000 |
| Section 5 – Missions | 134,709 | 125,000 | – | 125,000 |
| Section 6 – Office and miscellaneous | 2,214,360 | 2,000,000 | – | 2,000,000 |
| Section 7 – Technical aid for the Group of Engineers | 280,152 | 300,000 | – | 300,000 |
| | 45,310,243 | 46,373,000 | 1,052,300 | 47,425,300 |
| Section 11 – World Administrative Broad- casting-Satellite Conference (1977) | 368,231 | 1,594,000 | – | 1,594,000 |
| World Administrative Aero- nautical Radio Conference | 363,800 | – | – | – |
| Group of Experts, Radio Regulations (1976) | 226,620 | – | – | – |
| Section 12 – CCIR meetings | 3,792,282 | 1,666,000 | 22,000 | 1,688,000 |
| Section 13 – CCITT meetings | 2,644,256 | 1,493,000 | 15,300 | 1,508,300 |
| Section 14 – Regional Administrative Con- ferences | – | – | – | – |
| Section 15 – ITU Seminars | 68,868 | – | – | – |
| Section 16 – Seminars of Member Adminis- trations | 173,111 | 200,000 | – | 200,000 |
| Section 17 – Common expenditure for con- ferences and meetings | – | 3,155,000 | 49,300 | 3,204,300 |
| | 52,947,411 | 54,481,000 | 1,138,900 | 55,619,900 |
| Fitting out of CCITT Laboratory | 37,231 | 75,000 | – | 75,000 |
| Maintenance and renewal of simultaneous interpretation and other electroacoustical equipment | 4,669 | 35,000 | – | 35,000 |
| Staff expenditure in 1976 | 1,017,000 | – | – | – |
| | 54,006,311 | 54,591,000 | 1,138,900 | 55,729,900 |
| Transfer to ITU Reserve Account (Res. No. 11, Convention, 1973) | 2,140,000 | 4,350,000 | – | 4,350,000 |
| Surplus income | 570,238 | – | – | – |
| | 56,716,549 | 58,941,000 | 1,138,900 | 60,079,900 |
| II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET | | | | |
| Section 21 – Technical Cooperation : Administrative costs | 7,753,514 | 7,847,000 | 186,000 | 8,033,000 |
| III. SUPPLEMENTARY PUBLICATIONS BUDGET | | | | |
| Total expenditure | 10,496,301 | 7,222,000 | 38,300 | 7,260,300 |
| Surplus income | – | 24,000 | – | – |
| | 10,496,301 | 7,246,000 | 38,300 | 7,260,300 |

SUMMARY OF ESTIMATED INCOME FOR 1977

| INCOME | Income 1976 Swiss francs | Budget 1977 Swiss francs | Additional income Swiss francs | Budget 1977 including add. income Swiss francs |
|--|--------------------------------|--------------------------------|--------------------------------------|---|
| I. BUDGET OF THE UNION | | | | |
| Contributions | | | | |
| - Contributions by Union Members for the current year | 46,867,492 | 54,631,500 | — | 54,631,500 |
| - Contributions by recognized private operating agencies and scientific or industrial organizations to defrayal of expenses of conferences and meetings (Sections 11 to 13): | | | | |
| - CCIR | 1,391,983 | 1,587,600 | — | 1,587,600 |
| - CCITT | 2,287,333 | 2,581,200 | — | 2,581,200 |
| Sundry income | 214,841 | 30,700 | — | 30,700 |
| | 50,761,649 | 58,831,000 | — | 58,831,000 |
| Withdrawal from CCITT Reserve Fund for fitting out the CCITT Laboratory | 37,231 | 75,000 | — | 75,000 |
| Withdrawal from the Renewal Fund for maintenance and renewal of simultaneous interpretation and other electroacoustical equipment | 4,669 | 35,000 | — | 35,000 |
| Withdrawal from Reserve Account to cover additional credits | 5,913,000 | — | 1,138,900 | 1,138,900 |
| | 56,716,549 | 58,941,000 | 1,138,900 | 60,079,900 |
| II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET | | | | |
| Contribution to Technical Cooperation administrative costs and sums brought forward from previous years | 7,753,514 | 7,847,000 | 186,000 | 8,033,000 |
| III. SUPPLEMENTARY PUBLICATIONS BUDGET | | | | |
| Total income | 9,592,708 | 7,246,000 | — | 7,246,000 |
| Excess expenditure | 903,593 | — | — | 14,300 |
| | 10,496,301 | 7,246,000 | — | 7,260,300 |

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ANNEX 2 B

PROFIT AND LOSS ACCOUNT FOR 1977

ANNEX 2 B

PROFIT AND LOSS ACCOUNT FOR 1977

(Management account) (in Swiss francs)

| EXPENDITURE | 1977 Budget* | 1977 Accounts |
|---|--------------|---------------|
| I. BUDGET OF THE UNION | | |
| Section 1 – Administrative Council | 740,700.– | 699,500.65 |
| Common Headquarters expenditure : | | |
| Section 2 – Staff | 33,989,600.– | 34,828,308.20 |
| Section 3 – Social security | 7,474,000.– | 7,268,215.01 |
| Section 4 – Premises | 2,796,000.– | 2,792,920.95 |
| Section 5 – Missions | 125,000.– | 124,133.25 |
| Section 6 – Office and miscellaneous | 2,000,000.– | 2,051,053.35 |
| Section 7 – Technical aid for the Group of Engineers | 300,000.– | 301,494.25 |
| | 47,425,300.– | 48,065,625.66 |
| Section 11 – World Administrative Conferences : | | |
| Satellite WARC | 1,594,000.– | 1,588,164.85 |
| Section 12 – CCIR meetings | 1,688,000.– | 1,463,198.45 |
| Section 13 – CCITT meetings | 1,508,300.– | 1,111,032.15 |
| Section 15 – ITU Seminars | – | – |
| Section 16 – Seminars of Member Administrations | 200,000.– | 180,096.92 |
| Section 17 – Common expenditure for conferences and meetings | 3,204,300.– | 1,844,477.65 |
| | 55,619,900.– | 54,252,595.68 |
| Fitting out the CCITT Laboratory | 75,000.– | 74,567.25 |
| Maintenance and renewal of simultaneous interpretation and other electroacoustical equipment | 35,000.– | 37,862.75 |
| Bad debts written off | – | 80,012.25 |
| | 55,729,900.– | 54,445,037.93 |
| Transfer to ITU Reserve Account (Res. No. 11 – Torremolinos Conf.) | 4,350,000.– | 4,350,000.– |
| | 60,079,900.– | 58,795,037.93 |
| Surplus income paid into ITU Reserve Account | | 1,981,012.67 |
| | 60,079,900.– | 60,776,050.60 |

* Budget for 1977 including additional credits.

PROFIT AND LOSS ACCOUNT FOR 1977
(Management account) (in Swiss francs)

| INCOME | 1977 Budget* | 1977 Accounts |
|---|--------------|---------------|
| I. BUDGET OF THE UNION | | |
| Contributions : | | |
| – Contributions of Members of the Union to defrayal of expenditure for the current year | 54,631,500.– | 54,954,000.– |
| – Contributions of private operating agencies and scientific or industrial organizations to defrayal of expenses of conferences and meetings under Sections 11, 12 and 13 : | | |
| – Satellite WARC | – | 7,731.– |
| – CCIR | 1,587,600.– | 1,600,200.– |
| – CCITT | 2,581,200.– | 2,654,100.– |
| – Sundry income | 30,700.– | 228,677.35 |
| | 58,831,000.– | 59,444,708.35 |
| – Withdrawal from CCITT Reserve Fund for fitting out CCITT Laboratory | 75,000.– | 74,567.25 |
| – Withdrawal from Renewal Fund for maintenance and renewal of simultaneous interpretation equipment | 35,000.– | 37,862.75 |
| – Withdrawal from ITU Reserve Account to cover writing off of bad debts | – | 80,012.25 |
| – Withdrawal from ITU Reserve Account to cover additional credits | 1,138,900.– | 1,138,900.– |
| | 60,079,900.– | 60,776,050.60 |

* Budget for 1977 including additional credits.

PROFIT AND LOSS ACCOUNT FOR 1977

(Management account) (in Swiss francs)

| EXPENDITURE | 1977 Budget* | 1977 Accounts |
|---|--------------|---------------|
| II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET | | |
| Section 21 – Technical Cooperation: Administrative costs in 1977 | 8,033,000.– | 6,661,057.50 |
| Excess expenditure brought forward from 1976 | | 875,119.76 |
| | 8,033,000.– | 7,536,177.26 |
| III. SUPPLEMENTARY PUBLICATIONS BUDGET | | |
| Section 24 and 25 – Publications issued in 1977 including overheads | 6,007,300.– | 8,576,203.91 |
| Section 26 – Publications sold at a loss | 1,138,000.– | 1,650,167.60 |
| Section 27 – Miscellaneous | 115,000.– | 253,536.– |
| | 7,260,300.– | 10,479,907.51 |
| Surplus income paid into Publications Capital Account | | 733,674.83 |
| | 7,260,300.– | 11,213,582.34 |

* Budget for 1977 including additional credits.

PROFIT AND LOSS ACCOUNT FOR 1977
(Management account) (in Swiss francs)

| INCOME | 1977 Budget* | 1977 Accounts |
|--|--------------|---------------|
| II. TECHNICAL COOPERATION SPECIAL ACCOUNTS BUDGET | | |
| Contribution by UNDP to defrayal of expenditure on projects | | 4,299,414.80 |
| Contribution for Funds-in-Trust | 8,033,000.— | 1,463,099.70 |
| Contribution from the Special Fund for Technical Cooperation | | 11,596.— |
| Other income : | | |
| — Balance of unused credits, 1976 | | 15,114.85 |
| — Sundry income | | 324,642.25 |
| — Balance of Fund for the Retirement of Staff Members of the Union | | 24,805.25 |
| Reimbursement by UNDP and the Administrative Councils Operational Fund of excess administrative costs in 1976 | | 875,119.76 |
| | 8,033,000.— | 7,013,792.61 |
| Excess expenditure carried forward to 1978 | | 522,384.65 |
| | 8,033,000.— | 7,536,177.26 |
| III. SUPPLEMENTARY PUBLICATIONS BUDGET | | |
| Sale of publications issued in 1977 | 6,021,000.— | 10,742,628.85 |
| Sale of publications issued in previous years | 50,000.— | (1,134,234.—) |
| Sale of publications sold at a loss | 250,000.— | 306,629.05 |
| Advertisements in the Telecommunication Journal | 800,000.— | 1,047,371.25 |
| Miscellaneous | 125,000.— | 251,187.19 |
| | 7,246,000.— | 11,213,582.34 |
| Excess expenditure | 14,300.— | |
| | 7,260,300.— | 11,213,582.34 |

* Budget for 1977 including additional credits.

ANNEX 3

LIST OF PUBLICATIONS ISSUED BY THE UNION IN 1977

* Photocomposition UIT

** IBM with memory UIT

| | | No. of copies | Total Number of pages per language |
|-------|---|-----------------------------|---|
| 1. | 12 Notifications, Nos. 1110 to 1121 | F 500 E 650 S 150 | 132 |
| 2. | 32 General Secretariat Circulars, Nos. 52 to 83 | F 580 E 1.100 S 280 | 96 |
| 3.* | 2 Lists of Publications | F 1.000 E 2.500 S 600 | 64 |
| 4. | Supplement No. 12 to the Volume of Resolutions and Decisions of the Administrative Council, 32nd Session, 1977 | F 400 E 500 S 200 | 42 |
| 5. | Financial Operating Report for 1976 | F 500 E 600 S 230 | 44 |
| 6. | Report on the Activities of the Union 1976 | F 650 E 750 S 350 | 136 132 136 |
| 7. | Telecommunication Journal, 12 numbers, vol. 44 I-XII | F 1.850 E 3.800 S 850 | 1.230 |
| 8. | 15 Operational Bulletins, Nos. 132 to 146, trilingual | 1.270 | 280 |
| 9.** | List of Addresses, 4th edition 1972: Supplement No. 12, trilingual | 1.900 | 66 |
| 10.** | Yearbook of Common Carrier Telecommunication Statistics, 4th edition, 1977, trilingual | 1.000 | 348 |
| 11.* | Final Acts to the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977 | F 700 E 900 S 230 | 150 |
| 12.** | List of Telecommunication Channels used for the Transmission of Telegrams, 1st edition, 1977, trilingual | 750 | 108 |
| 13. | List of Telegraph Offices, 24th edition 1976: Supplement No. 1, trilingual | 20.000 | 8 |
| 14.** | List of International Telephone Routes, 17th edition 1977, trilingual . . . | 850 | 246 |
| 15.** | List of Destination Indicators and Telex Identification Codes, 3rd edition, 1973: Supplements Nos. 6 and 7, trilingual | 1.600 | 80 |
| 16.** | Table of International Telex Relations and Traffic, 1976, trilingual . . . | 600 | 480 |

| | | No. of copies | Total Number of pages per language |
|-------|---|--------------------------------|---|
| 17.** | Gentex table, routing table for offices connected to the gentex service, 5th edition, 1976: Supplements Nos. 2 and 3, trilingual | 700 | 118 |
| 18.** | T.A. Table, Transferred Account Telegraph Service, 4th edition, 1973: Supplement No. 7, trilingual | 700 | 54 |
| 19.** | T.A. Table, Transferred Account Telegraph Service, 5th edition, 1977, trilingual | 600 | 262 |
| 20.** | Table of Telegraph Rates, 1st edition, 1975: Supplements Nos. 3 and 4, trilingual | 850 | 140 |
| 21.** | General information Relating to the Operation of the International Telegraph Service, 1st edition, 1976: Supplement No. 2, trilingual | 900 | 348 |
| 22.* | Instructions for the Operation of the International Public Telegram Service, 1977 edition | F 1.800 E 2.700 S 700 | 192 188 192 |
| 23. | Instructions for the Operation of the International Telex Service, 1977 edition | F 900 E 1.200 S 200 | 36 |
| 24. | List of Coast Stations, 6th edition, 1976: Supplements Nos. 1, 2 and special, trilingual | 27.500 | 348 |
| 25. | List of Ship Stations, 17th edition, 1977 and Supplements Nos. 1 and 2, trilingual | 18.500 | 952 |
| 26. | List of Radiodetermination and Special Service stations, 6th edition, 1976: Volume I: Supplements Nos. 1 and 2, trilingual Volume II and Supplement No. 1, trilingual | 24.000 22.500 | 176 508 |
| 27. | Alphabetical List of Call Signs of Stations Used by the Maritime Mobile Service, 8th edition, 1977, and Supplement No. 1, multilingual . | 20.500 | 304 |
| 28. | Alphabetical List of Call Signs of Stations other than Amateur Stations, Experimental Stations and Stations of the Maritime Mobile Service, 6th edition 1974: Supplement No. 7, trilingual | 3.100 | 28 |
| 29. | Alphabetical List of Call Signs of Stations other than Amateur Stations, Experimental Stations and Stations of the Maritime Mobile Service, 7th edition, 1977, and Supplement No. 1, trilingual | 1.850 | 312 |
| 30.* | Manual for use by the Maritime Mobile and Maritime Mobile Satellite Services: new pages 1977 | F 4.500 E 26.000 S 5.000 | 216 |
| 31. | Europe Plan, León, Spain, 1974: Supplement, trilingual | 380 | 408 |
| 32. | Asia and Oceania Plan, Tokyo, 1974: Supplement, trilingual | 300 | 64 |
| 33.* | Recommendations concerning the construction, installation and protection of telecommunication cables in public networks: Amendments and Additions, 1977 | F 700 E 1.000 | 10 |

| | | No. of copies | Total Number of pages per language |
|------|--|-------------------------------|---|
| 34.* | Instructions for the International Telephone Service, new pages 1977 . . | F 3.000 E 2.000 S 1.300 | 36 |
| 35.* | Documents of the VIth Plenary Assembly of the CCITT, Geneva, 1976, Orange Book: | | |
| | Volume I | F 750 E 2.000 S 400 | 258 |
| | Volume II.1 | F 1.000 E 2.500 S 500 | 96 |
| | Volume II.2 | F 1.000 E 2.500 S 500 | 316 |
| | Volume II.3 | F 1.100 E 2.600 S 550 | 236 |
| | Volume III | F 1.100 E 3.300 S 550 | 774 |
| | Volume IV.1 | F 1.100 E 3.000 S 550 | 308 |
| | Volume IV.2 | F 1.100 E 3.000 S 550 | 96 |
| | Volume V | F 1.000 E 2.600 S 500 | 148 |
| | Volume VI.1 | F 1.000 E 3.000 S 550 | 132 |
| | Volume VI.2 | F 1.000 E 3.000 S 550 | 160 |
| | Volume VI.3 | F 1.000 E 3.000 S 550 | 156 |
| | Volume VI.4 | F 1.000 E 3.000 S 550 | 60 |
| | Volume VII | F 1.000 E 2.800 S 500 | 320 |
| | Volume VIII.1 | F 1.100 E 3.600 S 550 | 232 |
| | Volume VIII.2 | F 1.100 E 3.600 S 550 | 224 |
| | Volume IX | F 1.000 E 2.400 S 500 | 96 |

| | | No. of copies | Total Number of pages per language |
|-----|--|-----------------------------|---|
| 36. | Documents of the XIIIth Plenary Assembly of the CCIR, Geneva, 1974: | | |
| | * Addendum No. 2 to Volume I | F 1.000 E 1.800 S 650 | 6 |
| | * Addendum No. 1 to Volume II | F 1.150 E 2.500 S 650 | 2 |
| | * Addendum No. 1 to Volume III | F 1.100 E 2.000 S 650 | 2 |
| | * Addenda Nos. 1 and 2 to Volume IV | F 1.000 E 1.800 S 650 | 5 |
| | * Addendum No. 1 to Volume V | F 1.000 E 1.850 S 650 | 2 |
| | * Addendum No. 1 to Volume VII | F 1.000 E 1.500 S 650 | 4 |
| | * Addenda Nos. 1, 2, 3 and 4 to Volume VIII | F 1.000 E 1.900 S 650 | 7 |
| | * Addendum No. 1 to Volume IX | F 1.000 E 2.200 S 650 | 4 |
| | * Addendum No. 1 to Volume XI | F 1.000 E 2.000 S 650 | 2 |
| | * Supplement to Volume XIII: Alphabetical Index to Volumes I to XII | F 800 S 300 | 68 88 |
| 37. | Special Report of Interim Working Party PLEN./2, 2nd edition, 1977 . . | F 250 E 500 S 250 | 270 |
| 38. | Chapter 4 of the Handbook for Monitoring Stations, 1977 | F 600 E 900 S 300 | 32 |
| 39. | International Frequency List, 8th edition 1975: | | |
| | Preface: Supplement No. 7, trilingual | 1.800 | 36 |
| | Volume I: Supplement No. 7, multilingual | 1.200 | 156 |
| | Volume II: Supplement No. 7, multilingual | 1.200 | 104 |
| | Volume III: Supplement No. 7, multilingual | 1.200 | 116 |
| | Volume IV: Supplement No. 7, multilingual | 1.200 | 164 |
| | Volume Va): Supplement No. 7, multilingual | 1.000 | 16 |
| | Volume Vb): Supplement No. 7, multilingual | 900 | 256 |
| | Volume Vc): Supplement No. 7, multilingual | 900 | 184 |
| | Volume Vd): Supplement No. 7, multilingual | 900 | 72 |

| | | No. of copies | Total Number of pages per language |
|------|---|-------------------------------|---|
| 40. | International Frequency List, 9th edition 1977: | | |
| | Preface and Supplements Nos. 1 and 2, trilingual | 1.000 | 206 |
| | Volume I and Supplements Nos. 1 and 2, multilingual | 900 | 1.056 |
| | Volume II and Supplements Nos. 1 and 2, multilingual | 900 | 1.052 |
| | Volume III and Supplements Nos. 1 and 2, multilingual | 900 | 980 |
| | Volume IV and Supplements Nos. 1 and 2, multilingual | 900 | 1.164 |
| | Volume Va) and Supplements Nos. 1 and 2, multilingual | 800 | 172 |
| | Volume Vb) and Supplements Nos. 1 and 2, multilingual | 800 | 1.540 |
| | Volume Vc) and Supplements Nos. 1 and 2, multilingual | 700 | 860 |
| | Volume Vd) and Supplements Nos. 1 and 2, multilingual | 700 | 316 |
| 41. | List of Fixed Stations Operating International Circuits, 8th edition, 1975: Supplement No. 7, trilingual | 1.300 | 84 |
| 42.* | List of Fixed Stations Operating International Circuits, 9th edition, 1977, and Supplements Nos. 1 and 2, trilingual | 1.150 | 504 |
| 43.* | List of Broadcasting Stations Operating in Bands Below 5 950 kHz, 9th edition, 1977, and Supplement No. 1, trilingual | 900 | 298 |
| 44. | List of Stations in the Space Service and in the Radioastronomy Service, 5th edition, 1975: Supplement No. 3, trilingual | 800 | 88 |
| 45. | 52 IFRB Weekly Circulars, Nos. 1247 to 1297: | | |
| | Parts I-II-III and Special, trilingual | 400 | 3.862 |
| | Part IV, trilingual | 450 | 484 |
| 46. | 3 Summaries of Monitoring Information Received by the IFRB, Nos. 192 to 194, trilingual | 500 | 692 |
| 47. | Tentative High Frequency Broadcasting Schedules, March 1977, May 1977, September 1977, November 1977, trilingual | 600 | 1.138 |
| 48. | High Frequency Broadcasting Schedules, May 1976, September 1976, November 1976, March 1977, trilingual | 470 | 950 |
| 49.* | Seminar on the planning, operation and maintenance of transmission systems, PANAFTEL I, Abidjan, 1974 | F 500 E 500 | 438 |
| 50.* | Information Booklet No. 20: Centenary of the Telephone, 1977 | F 800 E 1.700 S 280 | 130 |
| 51.* | Information Booklet No. 21: Sixteenth Report by the International Telecommunication Union on Telecommunication and the Peaceful Uses of Outer Space, 1977 | F 2.500 E 4.500 S 1.200 | 160 |

ANNEX 4

ACTIVITIES OF THE COMPUTER DEPARTMENT IN 1977

1. The ITU computer was used for 2,709 hours in 1977, an effective increase over 1976. The total hours of use, however, are not directly comparable to those of 1976, since the configuration of the ITU Computer Center has changed as a result of the installation of units of different speed and capability.

2. With the introduction of the multiprogramming operation possibility in 1976 it has been necessary to review the Job Accounting procedure of computer usage. The new Job Accounting System which came into force by the end of 1976 monitors the detailed resource (central processor, memory, tapes, disks, printers, etc.) usage by each program. The average utilization of the computer resources by the different organs of the Union was:

| | |
|-------------------|-------|
| IFRB | — 53% |
| General Secretary | — 37% |
| CCIR | — 5% |
| CCITT | — 5% |

The increased use of computer resources in 1977 by the IFRB was mainly a result of conference work (follow-up for the LF/MF and Maritime Conferences, the BC-Satellite Conference and preparation for the Aeronautical Conference), with programs making heavy demands on the central processing unit.

3. During the past year, most of the modifications of the computer configuration foreseen as a result of the re-organization of methods of work at the Headquarters were implemented. The new disk storage units of 144 million bytes have been installed and the necessary software changes and conversions of main files made without disrupting computer service to the various users. The changes in main memory extension were due to be carried out in January 1978. In addition, one terminal was installed in the IFRB and the relevant software developments were initiated to support this terminal. Further steps were taken in regard to installation of terminals in other services at the Headquarters.

4. In order to optimize the potential of the ITU Computer Center in today's climate of rapid technological change, it is essential that the professional staff of this center should keep abreast of the advanced methods, techniques and skills currently available to help to meet the critical functional time and cost constraints of their environment. The comprehensive training program organized through the Computer Department has thus continued; it includes the following activities for various professional staff:

- Design of Teleprocessing Systems: one-week workshop organized by the Department for its staff and the staff of the IFRB Technical Department,
- Structured Program Design Methodology: Two-week workshop.

Personnel also took part in various external training activities including advances in Data Base Technology and a number of seminars and training courses in Data Processing and Programming.

5. The Union continued to use outside computers either to fulfil some of its specific non-recurring tasks which require a computer of greater capacity than that used by ITU in-house services or to meet special demands, especially during conferences.

6. The WARC (Broadcasting-Satellite) required intensive use of ITU computer facilities. The large scale computer of the UN International Computing Center was used to run one of the programs with processing requirements which could not be met by the ITU computer within the time limits imposed by the Conference. The Conference also used facilities made available by the French Administration (TDF). Furthermore, back-up support was provided not only to the Conference secretariat but also to individual users. The plotter of the ITU Computer Center proved to be extremely useful for the conference work, being used intensively to produce graphical presentations of the plan and related drawings, especially in regard to displaying requirements for service areas and spillover between adjacent beam areas.

7. Substantial IFRB utilization of the computer was required for the re-examination of the provisional notices in the 4 MHz band of HF coast radio-telephone stations (Resolution Mar2-11 of the World Maritime Administrative Radio Conference, Geneva, 1974).

8. To meet the requests of 17 administrations, tapes containing the data and the programs used to elaborate the Final Acts of the Regional Administrative LF/MF Conference have been prepared and sent to them for a fee covering the ITU costs.

9. Staff from the Department participated in various meetings including preparation for conferences and provided necessary software support to engineers of services requiring advice, assistance and/or study.

10. The ITU computer is currently handling 74 tasks as regular applications. For details concerning IFRB and the CCI's, see Sections 5.2, 5.3 and 5.4 respectively.

11. Apart from its routine work, the Department continues to study various tasks lending themselves to computer applications. If, after preliminary feasibility studies, it is decided to computerize a task in the interests of efficiency and effectiveness, a detailed system analysis is carried out, a computer system is designed, the relevant programs are written and tested, the necessary manuals compiled and procedures explained to the user. The system in question is then put through a final test, and when the results are fully satisfactory to the user, the system is implemented. Activities along these lines, in 1977, are summarized in the following paragraphs.

12. The ITU Text Processing System played a key role in the building up of the ITU Text Data Base. The system was used in the capture and storage of the CCITT Orange Book, the Re-arrangement of the Radio Regulations, Administrative Council Documents, WARC Final Acts, Technical Cooperation reports, prototype terminology data base, etc. Further substantial economies for the Union will be derived from the establishment of this data base and 1977 already provided a few examples. The first was the contribution of certain material for the preparation of the publication of the new editions of the Manual for the Maritime Mobile Service and the Instructions for the Operation of the International Public Telegraph Service from texts previously captured for the Orange Book, which was almost an automatic production of these publications. The second was the aid provided in the preparation of the Index of the Orange Book. The Text Data Base was also used in the preliminary tests of a computerized system which will help in the establishment and updating of the ITU Terminology Data Base (see items 16/17). The development of the ITU Text Processing System continued in 1977 with additional capabilities. The impact of the system was also felt outside the ITU. Arrangements have been made to make the system available, against payment, to outside users such as the Swiss PTT.

13. The enhancement of the ITU Computerized Composition System continued in 1977 when the significant development work moved into an operational phase. The system is being used in the photocomposition of several ITU publications: CCITT Orange Book, Telegraphic Instructions, Maritime Manual, IFRB List VIIIA. The Department played a significant role in the successful production of these publications by the daily and timely processing of this high volume of data (for example 12,000 printed pages only for the Orange Book) in the central computer without additional staff in the Computer Department. Other organizations have also shown interest in developments in this area and one of them, the International Organization for Standardization (ISO) made use of the ITU system. The ISO Yearly Catalogue and its quarterly supplements were prepared with this system, against payment. Collaboration with the Belgium RTT was continued in this area.

14. Special attention was given by the Department to the training of the ITU composition codification specialists in the more advanced capabilities of the composition language, especially in the area of table make-up. These later capabilities were already used in 1977 in the preparation of the ISO Catalogue and of the Remarks to List VIIIA.

15. The system of photocomposition for ITU publications in the form of lists prepared with the help of the computer continues to be applied ever more widely since it results in faster production and better quality of printing and presentation at a lower cost.

16. A pilot experiment was conducted with the software system TEAM, developed by the Language Division at the Headquarters of the computer supplier for the creation and updating of multilingual terminology data bases. In collaboration with the ITU Language Division, a small terminology data base was created and a prototype lexicon (English/French/Spanish) produced. In this pilot project, the programs were run at the Computer Supplier's Headquarters. The results obtained were satisfactory. In 1978, the Department is planning to implement a system in the ITU computer for the creation and continuous updating of the ITU Terminology Data Base. This latter task will be facilitated by the parallel development in the area of computerized terminology recognition (see para. 17) which will be the interface with the ITU Text Data Base. An exchange of terminology with other technical centers is planned. The TEAM system is planned to be used in the preparation and publication of the new edition of the List of Definitions.

17. Preliminary experiments were conducted to evaluate the feasibility of a computerized system for the recognition of technical terminology in a free text. The first results were promising and the work is in progress for the implementation of an ITU Multilingual Terminology Recognition System. The present main objective of the system is to monitor the use of new terms in the ITU texts and to report them for possible introduction into the ITU Terminology Data Base, from which up-to-date lexicons could be produced for use by the ITU translators and interpreters.

18. During the past year, modifications of the integrated salary/personnel system were required, partly due to changes imposed by regulations and partly in order to improve existing procedures. Inter alia, an efficient solution was developed and used in the calculation of retro-active payments due to the reclassification, which would otherwise involve voluminous manual work. The advantages of the system have been highlighted with respect to the currency fluctuations in salary payments.

19. The new system developed for salaries budget and control in 1976 was fully implemented. Further developments are planned for 1978, especially in the computer monitoring of any differences in the budget and payroll figures.

20. The ITU Pension Fund programs were adapted for the processing of end-of-year information of the World Intellectual Property Organization.

21. A re-evaluation study has been started with the objective of improving the services provided to the users of the Address Bank System.

22. A system was developed and implemented to process the artery lists for the Plan Books of the CCITT.

23. The new Ship Stations system became operational in 1977. Necessary assistance was provided for the implementation of the system. Further developments are foreseen for 1978.

24. Microfiche output for internal use of the External Relations Department was introduced in the List of Telegraphic Offices system.

25. The program developed to apply a computerized standard procedure in checking all call-signs with regard to their allocation and formation in accordance with the Radio Regulations has been amended.

26. A system to process and produce project status reports for the Technical Cooperation Department, as a first stage of a possible overall Project Management System, was implemented as planned. A study is in progress on a second stage involving a procedure to process purchase orders and payments in view of exchange rate fluctuations.

27. Assistance, including the preparation of special programs, continued to be given to the Technical Cooperation Department by processing statistical data and calculating alternative routings for the Middle East Telecommunication Network.

28. An attempt has been made to use an existing computer system, developed for reprography statistics, to also produce statistics for text composition. Since not all requirements could be met by the existing system, a study has begun on a possible computer system to produce statistical information on document production.

29. Data on magnetic media continued to be supplied to Administrations at cost and to the private sector on a profit basis. Data are also available now on microfiche for some of the computer files.
30. System and program maintenance continue to require a significant percentage of our systems development resources. For example, only the maintenance of the payroll system involved more than half a man-year. Hence progress in other areas was not as rapid as might have been desired.
31. The system for transmission of data files on a remote batch processing mode from our terminals was further developed and improved. The necessary software has also been developed to transfer data from floppy disks on to magnetic tapes in an off-line mode.
32. Work continued on the development of new procedures and utility programs for a further improvement of computer operating efficiency. Furthermore, a new version of the operating system has been implemented. The latest version of the SESAM data bank system was also implemented and the related files converted.
33. The review of the ITU Data Processing Standards was continued in 1977. Since they represent the guidelines for the work of analysts, programmers, and operators, they should be updated to reflect the latest concepts and the Computer Department's growing experience in this dynamic field.
34. A detailed study of the possible replacement of the punch card data entry system by new data entry equipment was undertaken. Due to the variety and nature of our tasks and possible new methods with IFRB applications, no final conclusion has been reached yet. The study continues and the latest developments in this field are under investigation.
35. During the year, the Department participated in the meetings of the computer suppliers' users' group to study common problems of computer users in Switzerland in various areas, and attended three meetings organized by the group.
36. The Department represented the Union at several international meetings and contributed to their work on Data Bases and Computer/Communications.
37. Twenty-three courses and information sessions were organized during the year to keep the staff concerned with computer use informed of new developments and recent procedures applied in the ITU computer.
38. Explanations and, when required, advice were given to Administrations and visitors to Headquarters concerning the Union's computer work and related problems.

ANNEX 5

CONFERENCES AND MEETINGS
AT WHICH THE UNION WAS REPRESENTED IN 1977

| | | <i>Number of participants</i> | |
|-------------------|--|-------------------------------------|---------------------|
| | | Officials from Head- quarters | Regional Experts |
| A. UNITED NATIONS | | | |
| 1. | 46th Session of the Consultative Committee on Administrative Questions (CCAQ), Geneva, 17-22 January | 1 | |
| 2. | 10th Session of the Inter-Organization Board for Information Systems and Related Activities (IOB), Paris, 9-11 February | 1 | |
| 3. | 14th Session of the Scientific and Technical Sub-Committee of the Committee on the Peaceful Uses of Outer Space, New York, 14-25 February | 1 | |
| 4. | 4th Session of the Inter-Agency Task Force on Information Exchange and Transfer of Technology, New York, 14-18 February | 1 | |
| 5. | Administrative Committee on Coordination (ACC): 5th Session of the Sub-Committee on Education and Training, Geneva, 14-16 February | 2 | |
| 6. | Resumed 46th Session of the Consultative Committee on Administrative Questions (CCAQ), New York, 22 February - 2 March | 1 | |
| 7. | 5th Session of the International Civil Service Commission (ICSC), New York, 22 February - 11 March | 1 | |
| 8. | Administrative Committee on Coordination (ACC), 3rd Session of the Task Force on Rural Development, Geneva, 2-4 March | 1 | |
| 9. | Informal Inter-Agency Meetings concerning 6th Session of the Conference on the Law of the Sea, Geneva, 14-16 March | 1 | |
| 10. | 16th Session of the Legal Sub-Committee of the Committee on the Peaceful Uses of Outer Space, New York, 14 March - 8 April | 2 | |
| 11. | Economic Commission for Latin America: 2nd Session of Caribbean Development and Cooperation Committee, Santo Domingo, 16-22 March | | 1 |
| 12. | Administrative Committee on Coordination (ACC): 85th Session of the Preparatory Committee, Paris, 17 March - 1 April | 1 | |
| 13. | <i>Ad Hoc</i> Inter-Agency Working Group on the Application of Computer Technology to Development, Geneva, 21-25 March | 1 | |
| 14. | Economic and Social Commission for Asia and the Pacific: 33rd Session, Bangkok, 20-30 April | | 1 |
| 15. | Advisory Committee on the Application of Science and Technology to Development (ACAST); 6th Session of the European Regional Group, Geneva, 18-20 May 1977 | 1 | |
| 16. | 20th Session of the Committee on the Peaceful Uses of Outer Space, Vienna, 20 June - 1 July | 1 | |
| 17. | 7th Session of the Working Group on International Statistical Programmes and Coordination, Geneva, 23-24 June | 1 | |
| 18. | Interim <i>Ad Hoc</i> Inter-Agency Meeting on Language Arrangements, Documentation and Publications, Geneva, 28 June | 2 | |
| 19. | Administrative Committee on Coordination (ACC): Preparatory Committee, Geneva, 5 July | 1 | |

| | | <i>Number of participants</i> | |
|-----|--|-------------------------------------|---------------------|
| | | Officials from Head- quarters | Regional Experts |
| 20. | 63rd Session of the Economic and Social Council, Geneva, 6 July - 5 August | 4 | |
| 21. | 4th Session of the Joint United Nations Information Committee, Geneva, 12-15 July | 1 | |
| 22. | Administrative Committee on Coordination (ACC): 25th Session of the Sub-Committee on Science and Technology, Geneva, 20-22 July | 2 | |
| 23. | 47th Session of the Consultative Committee on Administrative Questions (CCAQ), Vienna, 16-26 August | 1 | |
| 24. | 6th Session of the International Civil Service Commission (ICSC), Vienna, 16 August - 2 September | 1 | |
| 25. | 5th Session of the Inter-Agency Task Force on Information Exchange and Transfer of Technology, Geneva, 12-20 September | 2 | |
| 26. | Administrative Committee on Coordination (ACC): 2nd Session of the Sub-Committee on Outer Space Activities, Paris, 13-16 September | 1 | |
| 27. | 47th Session of the Consultative Committee on Financial and Budgetary Questions, New York, 19-23 September | 1 | |
| 28. | Resumed 47th Session of the Consultative Committee on Administrative Questions (CCAQ), Geneva, 5-7 October | 1 | |
| 29. | Advisory Committee on the Application of Science and Technology to Development: Regional African Group, Addis Ababa, 15-17 October | | 1 |
| 30. | Administrative Committee on Coordination: Session of the Working Group on Educational Technology of the Sub-Committee on Education and Training, Geneva, 18-19 October | 1 | |
| 31. | Administrative Committee on Coordination (ACC): 87th Session of the Preparatory Committee, New York, 19-26 October | 1 | |
| 32. | 71st Session of the Administrative Committee on Coordination, New York, 31 October - 1 November | 1 | |
| 33. | United Nations Conference on Trade and Development: Meeting of Multilateral and Bilateral Financial and Technical Assistance Institutions with Representatives of the Least Developed Countries, Geneva, 31 October - 8 November | 1 | |
| 34. | Administrative Committee on Coordination (ACC): 26th Session of the Sub-Committee on Science and Technology, Geneva, 3-4 November and 18 November | 2 | |
| 35. | 23rd Session of the Advisory Committee on the Application of Science and Technology to Development (ACAST), Geneva, 7-18 November | 3 | |
| 36. | <i>Ad Hoc</i> Inter-Agency Exploratory Meeting regarding the possible creation of an ACC Sub-Committee to improve coordination and ensure greater emphasis on the problems of the least developed countries by the United Nations agencies, Geneva, 10-11 November | 1 | |
| 37. | Economic and Social Commission for Asia and the Pacific (ESCAP): 1st Session of the Committee on Shipping, and Transport and Communications, Bangkok, 14-22 December | | 1 |

| | | <u>Number of participants</u> | |
|--|---|-------------------------------------|---------------------|
| | | Officials from Head- quarters | Regional Experts |
| B. SPECIALIZED AGENCIES | | | |
| <i>Inter-governmental Maritime Consultative Organization (IMCO)</i> | | | |
| 38. | 1st Session of the Preparatory Committee on the Establishment of an International Maritime Satellite System (INMARSAT), London, 10-14 January | 2 | |
| 39. | 17th Session of the Sub-Committee on Radiocommunications. London, 21-25 February | 3 | |
| 40. | First Meeting of the Technical Panel of the INMARSAT Preparatory Committee, Paris, 8-14 May | 1 | |
| 41. | Second Meeting of the Technical Panel of the INMARSAT Preparatory Committee, Newcastle-upon-Tyne, 9-14 October | 1 | |
| 42. | 2nd Session of the INMARSAT Preparatory Committee, London, 25-29 October | 1 | |
| 43. | 18th Session of the Sub-Committee on Radiocommunications, London, 28 November - 2 December | 2 | |
| <i>International Labour Office (ILO)</i> | | | |
| 44. | Joint Meeting on Conditions of Work and Employment in Postal and Telecommunications Services, Geneva, 8-16 March | 1 | |
| <i>World Intellectual Property Organization (WIPO)</i> | | | |
| 45. | 1st Session of the WIPO Permanent Committee for Development Cooperation Related to Copyright and Neighbouring Rights, Geneva, 17-21 March | 2 | |
| <i>World Health Organization (WHO)/International Radiation Protection Association (IRPA)</i> | | | |
| 46. | Joint Consultation on Non-Ionizing Radiation Criteria, Geneva, 21-25 November | 1 | |
| <i>World Meteorological Organization (WMO)</i> | | | |
| 47. | 8th Session of the Working Group on the Global Telecommunication System (GTS) of the WMO Commission for Basic Systems (CBS), Geneva, 21 November - 2 December | 3 | |
| <i>United Nations Educational, Scientific and Cultural Organization (UNESCO)</i> | | | |
| 48. | Committee of Experts on Technology Transfer and Communication, Paris, 29 August - 3 September | 1 | |
| 49. | Meeting on the Development of News Agencies and News Exchanges in Asia, Colombo, 5-9 December | | 1 |
| 50. | 36th Session of the International Conference on Education, Geneva, 30 August - 8 September | 1 | |
| <i>Universal Postal Union (UPU)</i> | | | |
| 51. | Meeting on Monetary Unit Problems, Berne, 11-12 May | 1 | |

Number of participants

| | |
|-------------------------------------|---------------------|
| Officials from Head- quarters | Regional Experts |
|-------------------------------------|---------------------|

C. INTERNATIONAL OR REGIONAL ORGANIZATIONS

Arab Telecommunication Union (ATU)

- | | | |
|-----|--|---|
| 52. | 4th Executive Conference, Cairo, 15-17 January | 1 |
|-----|--|---|

International Electrotechnical Commission (IEC)

- | | | |
|-----|--|---|
| 53. | Meeting of Technical Committee 12, The Hague, 13-20 November | 1 |
|-----|--|---|

European Conference of Postal and Telecommunications Administrations (CEPT)

- | | | |
|-----|--|---|
| 54. | Sub-Group No. 1 of Working Group 12 (Transmission/Visual/telephone) Florence, 22-26 February | 1 |
| 55. | Working Group 10, (Data Communications) Florence, 26 May - 2 June . . . | 1 |
| 56. | IXth Ordinary Session, Stockholm, 20 June - 1 July | 3 |

Inter-American Telecommunications Conference (CITEL)

- | | | |
|-----|---|---|
| 57. | Technical Seminar on Aeronautical Telecommunications, Buenos Aires, 31 October - 2 November | 1 |
| 58. | 1st Meeting of Permanent Technical Committee III: Radiocommunications, Buenos Aires, 3-4 November | 1 |
| 59. | 7th Meeting of the Permanent Executive Committee, Rio de Janeiro, 12-14 December | 3 |

International Special Committee on Radio Interference (CISPR)

- | | | |
|-----|---|---|
| 60. | Meetings of the Steering Committee and Sub-Committees, Dubrovnik, 25 October - 4 November | 1 |
|-----|---|---|

Danube Commission

- | | | |
|-----|---|---|
| 61. | Meeting of Experts on Radiocommunication Questions, Budapest, 10-20 January | 1 |
| 62. | XXXVth Session of the Commission, Budapest, 18-28 April | 1 |

European Conference on Electrotechnics

- | | | |
|-----|---------------------------------------|---|
| 63. | EUROCON 77, Venice, 3-6 May | 4 |
|-----|---------------------------------------|---|

Federation of Telecommunication Engineers of the European Community (FITCE)

- | | | |
|-----|--|---|
| 64. | Meeting of FITCE, Rotterdam, 12-17 September | 1 |
|-----|--|---|

International Astronautical Federation (IAF)

- | | | |
|-----|---|---|
| 65. | 33rd Session of the Bureau, Paris, 19 April | 1 |
| 66. | XXVIIIth International Astronautical Congress, Prague, 25 September - 1 October | 1 |

Institute of Electrical and Electronics Engineers (IEEE)

- | | | |
|-----|---|---|
| 67. | International Conference on Communications, Chicago, 12-19 June | 1 |
|-----|---|---|

| | | <u>Number of participants</u> | |
|---|--|-------------------------------------|---------------------|
| | | Officials from Head- quarters | Regional Experts |
| <i>European Federation of Telecommunication Users' Organizations</i> | | | |
| 68. | Meeting of the European Federation of Telecommunication Users' Organizations, Paris, 15-17 September | 1 | |
| <i>Organization of African Unity (OUA)</i> | | | |
| 69. | Meeting of Ministers of Information of the Member States, Addis Ababa, 4-9 April | | 1 |
| <i>International Radio and Television Organization (OIRT)</i> | | | |
| 70. | XXIVth Session of the Technical Committee, Warsaw, 25-28 October | 1 | |
| <i>European Broadcasting Union (EBU)</i> | | | |
| 71. | 29th Meeting of the Technical Committee, Venice, 17-22 April | 3 | |
| <i>International Union of Radio Science (URSI)</i> | | | |
| 72. | Symposium of Commission F (<i>Tropospheric Propagation</i>) of URSI; La Baule (France), 27 April - 6 May | 1 | |
| <i>NIG Nachrichtentechnische Gesellschaft im VDE</i> | | | |
| 73. | 3rd European Conference on Optical Communication, Munich, 14-16 September | 1 | |
| <i>Union of National Radio and Television Organizations of Africa (URTNA)</i> | | | |
| 74. | Technical Committee, Bamako, 12-14 December | | 1 |

D. OTHER MEETINGS

| | | | |
|--|---|---|--|
| <i>Swiss Federal Political Department</i> | | | |
| 75. | 4th Session of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, Geneva, 17 March - 10 June | 6 | |
| <i>Asian-Pacific Broadcasting Union</i> | | | |
| 76. | Meeting of the Asian-Pacific Broadcasting Union, Izmir (Turkey), 29 September - 1 October | 1 | |
| <i>Government of Yugoslavia</i> | | | |
| 77. | First Conference of Broadcasting Organizations of the Non-Aligned Countries, Sarajevo, 27-30 October | 1 | |
| <i>South Pacific Bureau for Economic Cooperation</i> | | | |
| 78. | 4th South Pacific Regional Telecommunications Meeting, Port Moresby, 11-15 July | 1 | |

| | | <u>Number of participants</u> | |
|----------------------|---|-------------------------------------|---------------------|
| | | Officials from Head- quarters | Regional Experts |
| <i>Popov Society</i> | | | |
| 79. | Meeting of the Popov Society, Moscow, 17-19 May | 1 | |
| <i>INTELCOM</i> | | | |
| 80. | Meeting of INTELCOM, Atlanta, 9-15 October | 1 | |
| SYMPOSIA, SEMINARS | | | |
| 81. | Seminar on Telecommunications for the Caribbean Countries, Santa Lucia, 16-20 May | 1 | |
| 82. | ESA/EBU Symposium on Direct Satellite Broadcasting, Dublin, 23-25 May | 1 | |
| 83. | Electromagnetic Compatibility Symposium and Exhibition, Montreux, 29 May | 3 | |
| 84. | Bergamo University Symposium on the Sociological Aspects of Telecommunications, Bergamo, 5-9 September | 1 | |
| 85. | 8th International Symposium on Human Factors in Telecommunications, Cambridge (United Kingdom), 12-16 September | 1 | |
| 86. | Organization for Economic Cooperation and Development: Symposium on Transborder Data Flows and the Protection of Privacy, Vienna, 20-23 September | 2 | |
| 87. | Symposium on Space Telecommunications of the XXVIII Congress of the IAF, Prague, 25 September - 2 October | 1 | |
| 88. | URSI/CNET International Symposium on Measurements in Telecommunications, Lannion (France), 2-7 October | 3 | |
| 89. | 4th Symposium on Reliability in Electronics, Budapest, 4-7 October | 1 | |
| 90. | Regional Seminar on Maritime Radiocommunications for Latin America and the Caribbean Countries, Buenos Aires, 17-29 October | 1 | |
| 91. | CITEL — Seminar on Aeronautical Telecommunications, Buenos Aires, 25 October - 5 November | 1 | |

ANNEX 6

Table 1

LIST OF UNDP/ITU PROJECTS UNDER IMPLEMENTATION IN 1977

| COUNTRY, Title of Project and No. | Duration (in years) | Total UNDP Contribution \$ | Assistance Rendered in 1977 | | | |
|---|---------------------------|-------------------------------------|-----------------------------|----------------------|--|-----------------------------|
| | | | Expert man/month | Fellows man/month | a) Equipment b) Subcon- tracting \$ | Total Expenditures \$ |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Africa | | | | | | |
| <u>Algeria</u> | | | | | | |
| ALG-72-009 - Institute of the Technology of Tele- communications and Electronics | 6 | 1,718,614 | 12/53.5 | - | a) 20,598 | 243,370 |
| ALG-77-002 - Telecommunication Institute, Oran | 3 | 592,000 | 5/2.5 | 3/4 | - | 9,598 |
| ALG-77-005 - Telecommunication Institute, Oran, Training of State Engineers. | 4 | 572,000 | 3/1 | - | - | 3,691 |
| <u>Angola</u> | | | | | | |
| ANG-77-004 - Training in Telecommunications | 3 | 791,000 | 1/1 | - | - | 5,945 |
| <u>Botswana</u> | | | | | | |
| BOT-73-002 - Adviser to Director of Posts and Telecommunications 1) | 5 | 120,214 | 1/1 | - | - | 4,568 |
| <u>Cameroon</u> | | | | | | |
| CMR-71-525 - Postal & Tele- communication Training Institute | 9 | 1,323,252 | 3/26.5 | 1/12 | a) 312 | 114,919 |
| <u>Cape Verde Islands</u> | | | | | | |
| CVI-75-005 - Assistance to Telecommunication and Radiocommunication Services | 3 | 47,858 | - | 7/30.5 | - | 22,534 |
| <u>Central African Empire</u> | | | | | | |
| CAF-74-009 - Telecommunication Training | 4 | 124,511 | - | 3/25.5 | - | 18,583 |
| CAF-75-013 - Development of Telecommunications | 3 | 30,424 | 1/0.4 | - | - | 1,284 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|-----|-----------|---------|---------|------------|---------|
| Africa (cont.) | | | | | | |
| <u>Egypt</u> | | | | | | |
| EGY-69-577 - Telecommunication Training & Research Institute | 9 | 1,799,212 | 1/1 | 1/4 | - | 5,425 |
| <u>Gambia</u> | | | | | | |
| GAM-77-005 - Telecommunication Link Banjul/Kaolack | 1 | 21,500 | 1/3 | - | a) 7,467 | 19,858 |
| <u>Guinea</u> | | | | | | |
| GUI-72-016 - Development of Telecommunications | 8 | 949,224 | 4/47 | 10/41.5 | a) 8,768 | 267,502 |
| <u>Guinea-Bissau</u> | | | | | | |
| GBS-75-006 - Restoration and Reorganization of Telecommunications | 6 | 381,757 | 2/3.5 | 8/36 | a) 4,140 | 32,771 |
| GBS-75-007 - Special Assistance to Broadcasting Service | 3 | 97,395 | - | - | a) 777 | 777 |
| <u>Equatorial Guinea</u> | | | | | | |
| EQG-74-001 - Development of Telecommunications | 7 | 616,164 | 2/4 | - | a) 44,715 | 63,383 |
| <u>Upper Volta</u> | | | | | | |
| UPV-77-103 - Study of satellite Radiocommunications | 1 | 2,750 | - | 1/3 | - | 2,880 |
| <u>Morocco</u> | | | | | | |
| MOR-74-007 - Establishment of a Postal and Telecommunication Institute using Audio-Visual Techniques | 6 | 1,241,673 | 10/30.5 | 7/5.5 | a) 144,235 | 271,872 |
| <u>Mauritania</u> | | | | | | |
| MAU-73-006 - Telecommunications | 7 | 176,049 | 2/2.5 | 2/24 | - | 26,466 |
| MAU-74-009 - National Telecommunications School, Nouakchott | 5 | 221,889 | 1/12 | 2/8 | - | 71,985 |
| <u>Namibia</u> | | | | | | |
| SWP-77-001 - Telecommunications and Postal training for SWAPO | 3 | 344,400 | - | 35/110 | - | 90,302 |
| <u>Niger</u> | | | | | | |
| NER-69-006 - Telecommunications | 11 | 328,838 | 1/12 | 1/12 | a) 3,214 | 58,150 |
| <u>Nigeria</u> | | | | | | |
| NIR-68-534 - Posts and Telecommunication Centre, Oshodi | 11 | 2,659,625 | 6/50 | 3/6 | a) 103,504 | 313,059 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|-----|-----------|--------|---------|-------------------------|---------|
| Africa (cont.) | | | | | | |
| <u>Nigeria (cont.)</u> | | | | | | |
| NIR-69-028 - Telecommunications | 10 | 586,917 | 1/12 | - | - | 45,423 |
| NIR-72-010 - National Telecommunications Development Planning | 7 | 1,749,137 | 4/43.5 | - | {a) 7,695 b) 132,120 | 350,381 |
| <u>Rwanda</u> | | | | | | |
| RWA-74-022-Integrated Programme of Telecommunication Assistance | 8 | 998,820 | - | - | a) 39,688 | 40,223 |
| <u>Senegal</u> | | | | | | |
| SEN-72-011 - Telecommunication Planning and Training of Personnel | 10 | 296,573 | 4/11 | 8/40.5 | - | 70,707 |
| <u>Somalia</u> | | | | | | |
| SOM-74-021 - National Institute of Telecommunication Training | 5 | 756,174 | 4/26 | - | a) 53,501 | 147,784 |
| <u>Sudan</u> | | | | | | |
| SUD-71-552 - Test, Repair and Maintenance Centre, Khartoum | 8 | 185,462 | 1/4.8 | - | a) 8,552 | 26,237 |
| SUD-74-016 - Space Communications | 4 | 115,223 | 1/12 | 5/13.5 | - | 65,382 |
| SUD-74-017 - Microwave Systems | 5 | 115,850 | 1/12 | - | - | 53,198 |
| SUD-74-020 - Telecommunications Development | 4 | 134,414 | - | 1/4.5 | a) 2,830 | 9,240 |
| <u>Swaziland</u> | | | | | | |
| SWA-68-011-Telecommunication Training | 11 | 115,911 | - | 1/6 | - | 7,504 |
| SWA-73-008 - Chief Engineer, Telecommunications | 5 | 164,049 | 2/13 | - | - | 36,578 |
| <u>Chad</u> | | | | | | |
| CHD-74-004 - Development of Telecommunications | 4 | 225,545 | 1/7 | - | a) 2,694 | 33,608 |
| CHD-75-021 - National School of Telecommunications SARH (LDC) 1) | 7 | 908,639 | 2/4.5 | 2/2 | a) 373,493 | 403,157 |
| <u>Tunisia</u> | | | | | | |
| TUN-72-006 - Postal and Telecom. School, Tunis | 10 | 1,587,407 | 17/50 | 11/27.5 | a) 159,380 | 373,655 |
| <u>Zaire</u> | | | | | | |
| ZAI-75-008 - Telecommunications Development | 3 | 60,461 | 1/1 | 2/1 | - | 5,734 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|-----|-----------|--------|------|-----------|---------|
| Africa (cont.) | | | | | | |
| <u>Zambia</u> | | | | | | |
| ZAM-71-516 - Postal and Telecom Corporation Staff Training College, Ndola | 8 | 1,197,157 | 3/27 | - | a) 93 | 97,886 |
| <u>Regional Projects</u> | | | | | | |
| RAF-71-155 - Multinational telecommunication and Postal Training Centre (Kenya, Uganda and Tanzania) | 8 | 2,155,736 | 8/83 | 5/11 | a) 2,892 | 373,464 |
| RAF-71-170 - Multinational School of Telecommunications - Rufisque | 7 | 1,611,794 | 2/15.5 | - | - | 60,878 |
| RAF-71-255 - Telecom. Link Gambia/Senegal | 7 | 498,754 | 1/6 | - | - | 72,374 |
| RAF-73-023 - Implementation of PANAFTTEL | 7 | 577,209 | 7/57.6 | - | - | 312,435 |
| RAF-73-076 - Investment Survey of National and Inter-Country Links | 6 | 420,550 | 2/5.5 | - | - | 32,586 |
| RAF-76-021 - Multi-country Post and Telecommunication Training Scheme Phase II | 4 | 653,200 | 1/45 | - | a) 43,323 | 208,566 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|-----|-----------|---------|--------|------------|---------|
| Asia and Pacific | | | | | | |
| <u>Afghanistan</u> | | | | | | |
| AFG-70-525 - Telecommunication Training Centre (Phase II) | 8 | 2,355,673 | 5/49 | 3/3 | a) 80,512 | 294,367 |
| AFG-74-039 - Telecommunication Network Planning Unit 1) | 4 | 244,436 | 4/19.5 | - | - | 81,169 |
| <u>Bangladesh</u> | | | | | | |
| BGD-72-022 - Telecommunication Training Centre 1) | 8 | 1,048,000 | 4/39 | 2/1 | a) 245,485 | 394,606 |
| <u>Burma</u> | | | | | | |
| BUR-74-045 - Telecommunication & Postal Training Centre | 7 | 1,103,000 | 3/9 | 9/21.5 | a) 57,402 | 128,772 |
| BUR-74-047 - Assistance in the Development of Telephone and Telegraph Systems | 5 | 197,427 | 4/34 | - | a) 445 | 113,515 |
| <u>India</u> | | | | | | |
| IND-72-037 - Advanced level Telecommunication Training Centre | 8 | 1,368,102 | 22/53.5 | 4/11 | a) 325,608 | 557,648 |
| IND-74-029 - Signals and Telecommunications | 5 | 28,570 | - | 2/6 | - | 7,298 |
| IND-74-044 - Expansion and Modernization of Telecommunication Services | 5 | 224,710 | - | 13/38 | - | 52,468 |
| <u>Indonesia</u> | | | | | | |
| INS-71-536 - Telecommunication Training Centre | 9 | 2,355,308 | 5/58.5 | 11/24 | a) 22,915 | 292,145 |
| <u>Iran</u> | | | | | | |
| IRA-70-522 - Telecommunication Training Institute | 8 | 1,381,099 | - | 4/6 | a) 435 | 8,797 |
| <u>Maldives</u> | | | | | | |
| MDV-72-001 - Establishment of an HF Communications Station | 6 | 114,779 | 1/1.5 | - | a) 459 | 9,960 |
| <u>Mongolia</u> | | | | | | |
| MON-71-510 - Establishment of a Faculty of Telecommunications at the State Polytechnic and Telecommunication Training Centre | 7 | 1,059,446 | 3/17.9 | - | - | 71,287 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|-----|-----------|--------|--------|------------|---------|
| Asia and Pacific (cont.) | | | | | | |
| <u>Nepal</u> | | | | | | |
| NEP-74-005 - Telecommunication Training Centre | 6 | 1,006,350 | 7/38 | 2/1 | a) 101,609 | 257,069 |
| <u>Pakistan</u> | | | | | | |
| PAK-68-539 - Telecommunication College | 10 | 1,357,264 | 1/8 | 5/20.5 | a) 21,329 | 87,755 |
| PAK-75-053 - Telecommunications Training Adviser | 4 | 109,750 | 1/4 | - | 302 | 18,954 |
| <u>Papua New Guinea</u> | | | | | | |
| PNG-73-002 - Telecommunications Technical Training | 5 | 88,368 | | - | - | 2,328 2 |
| PNG-75-014 - Telecommunication Training Centre | 7 | 1,756,492 | 6/36.5 | - | a) 111,175 | 266,104 |
| <u>Western Samoa</u> | | | | | | |
| WES-71-011 - Telecommunications Development | 9 | 367,968 | 3/26 | - | a) 547 | 67,039 |
| WES-73-004 - Telecommunications Training | 6 | 97,422 | - | 6/45.5 | - | 20,687 |
| <u>Singapore</u> | | | | | | |
| SIN-71-514 - Telecommunication Training Centre TELECENTRE | 9 | 1,525,183 | - | 5/16 | - | 21,402 |
| SIN-74-011 - Ponggol Radio-Receiving Station | 4 | 20,580 | 1/3 | 2/2 | - | 17,893 |
| <u>Sri Lanka</u> | | | | | | |
| SRL-71-527 - Telecommunication Training School | 7 | 641,683 | - | 2/2.5 | - | 3,117 |
| SRL-77-008 - Telecommunications | 1 | 4,650 | - | 3/1.5 | - | 3,029 |
| SRL-77-011 - Study Tour on Electronic Switching Systems | 1 | 13,780 | - | 4/4 | - | 13,908 |
| <u>Tonga</u> | | | | | | |
| TON-74-002 - Development of Telecommunications | 6 | 160,726 | 2/16 | - | - | 39,657 |
| TON-74-003 - Radio Technicians | 5 | 46,200 | - | 1/12 | - | 6,505 |
| <u>Regional Projects</u> | | | | | | |
| RAS-74-004 - Telecommunication Training (South Pacific) | 6 | 987,030 | 5/34.5 | - | a) 49,088 | 191,256 |
| RAS-74-005 - Feasibility Study Reg. Telecom. Network in South Pacific | 5 | 374,473 | 3/21 | - | a) 5,424 | 107,213 |
| RAS-75-051 - Coordination for Implementation of the Asian Telecom. Network | 3 | 54,000 | 2/15 | - | - | 71,205 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|-----|-----------|---------|---------|------------|---------|
| Latin America | | | | | | |
| <u>Netherlands Antilles</u> | | | | | | |
| NAN-74-007 - Telecommunication Training Centre | 4 | 115,094 | 2/6 | - | - | 21,392 |
| <u>Argentina</u> | | | | | | |
| ARG-74-007 - National Communications Laboratory | 6 | 614,317 | 2/12.5 | 2/9 | a) 9,791 | 68,931 |
| <u>Belize</u> | | | | | | |
| BZE-72-003 - Assistance to the Belize Telephone Authority (OPAS) | 6 | 177,601 | 2/7.2 | - | - | 19,032 |
| <u>Bolivia</u> | | | | | | |
| BOL-71-518 - Telecommunication Training Institute | 8 | 1,338,357 | 4/15 | 1/3 | a) 3,981 | 75,881 |
| <u>Brazil</u> | | | | | | |
| BRA-74-009 - Telecommunication Research and Development | 5 | 1,111,600 | 22/59.5 | - | a) 37,104 | 319,758 |
| BRA-74-010 - Human Resources-Telecom. Training | 5 | 978,499 | 6/37.5 | - | a) 25,065 | 184,402 |
| <u>Chile</u> | | | | | | |
| CHI-73-003 - Telecommunication Training Centre Phase II | 6 | 706,727 | 2/10.3 | - | a) 2,026 | 48,372 |
| <u>Colombia</u> | | | | | | |
| COL-72-035 - Training of Teaching Personnel & Promotion of Research in Telecommunications | 7 | 625,000 | 2/24 | 2/14 | a) 114,863 | 224,187 |
| <u>Cuba</u> | | | | | | |
| CUB-76-002 - Development of Communication Services | 4 | 1,200,000 | 1/2 | 3/5 | a) 424,605 | 445,151 |
| <u>El Salvador</u> | | | | | | |
| ELS-76-002 - Telecommunications Development | 2 | 90,000 | 5/17 | 10/14.5 | - | 80,280 |
| <u>Ecuador</u> | | | | | | |
| ECU-72-006 - National Telecom. Training Centre | 6 | 929,017 | 3/19.5 | - | a) 18,132 | 99,751 |
| <u>Guatemala</u> | | | | | | |
| GUA-73-002 - Telecommunications | 5 | 252,060 | 2/9 | - | - | 36,687 |
| <u>Guyana</u> | | | | | | |
| GUY-76-008 - Telecommunications Development | 5 | 375,000 | 2/5 | 3/2 | a) 79,472 | 112,676 |
| <u>Haiti</u> | | | | | | |
| HAI-77-010 - Telecommunications Development | 2 | 19,000 | 1/1 | - | - | 3,988 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|-----|-----------|------|-------|-----------|---------|
| Latin América (cont.) | | | | | | |
| <u>Jamaica</u> | | | | | | |
| JAM-77-004 - Telecommunications and Electronics Training | 3 | 730,275 | 2/24 | 1/12 | a) 21,782 | 132,708 |
| <u>Mexico</u> | | | | | | |
| MEX-77-011 - Telecommunications | 1 | - | - | 1/0.5 | - | 1,433 |
| <u>Peru</u> | | | | | | |
| PER-73-024 - Telecommunication Development and Training | 5 | 277,290 | 1/4 | - | - | 16,108 |
| <u>Trinidad and Tobago</u> | | | | | | |
| TRI-73-005 - Telecommunications | 7 | 594,482 | 3/30 | - | a) 44,165 | 149,900 |
| <u>Regional Projects</u> | | | | | | |
| RLA-72-094 - Central American Institute of Telecoms. (INCATEL) | 7 | 1,293,286 | 6/25 | 2/6.5 | a) 31,726 | 125,248 |
| RLA-74-023 - Telecommunications Integration & Develop- ment in Central America | 5 | 165,593 | 1/12 | - | a) 1,372 | 74,561 |
| RLA-74-028 - Radio Frequency Management Infra- structure & follow-up | 4 | 219,561 | 2/4 | - | a) 431 | 17,459 |
| RLA-75-012 - Seminar on Development of Maritime radio-communications | 3 | 50,000 | - | - | - | 53,934 |
| <u>Caribbean Region</u> | | | | | | |
| CAR-75-002 - Telecommunication Administration and Management | 4 | 141,248 | 1/12 | - | a) 286 | 57,797 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|-----|-----------|----------|-------|--------------------|---------|
| Europe and Middle East | | | | | | |
| <u>Saudi Arabia</u> | | | | | | |
| SAU-76-002 - Telecommunication & Broadcasting Training Institutes | 6 | 1,391,850 | 12/125.6 | - | - | 531,596 |
| <u>Bahrain</u> | | | | | | |
| BAH-77-003 - Telecommunications | 1 | 2,300 | - | 1/1 | - | 1,753 |
| <u>Bulgaria</u> | | | | | | |
| BUL-75-020 - Telecommunication Research Adviser | 6 | 554,911 | - | 3/1.5 | - | 5,399 |
| BUL-77-010 - Telecommunications | 1 | 18,600 | - | 1/3 | - | 2,180 |
| <u>United Arab Emirates</u> | | | | | | |
| UAE-73-005 - Telecommunication Adviser | 7 | 131,747 | 1/12 | - | - | 66,611 |
| UAE-77-001 - Network Planning & Transmissions | 2 | 18,200 | 1/6 | - | - | 32,142 |
| <u>Jordan</u> | | | | | | |
| JOR-73-007 - Telecommunication Training Centre | 6 | 1,724,896 | 6/51 | 4/18 | a) 123,998 | 365,105 |
| <u>Lebanon</u> | | | | | | |
| LEB-77-027 - Reorganization of Telecommunications | 1 | 212,850 | - | - | a) - b) 200,350 | 207,920 |
| <u>Oman</u> | | | | | | |
| OMA-73-002 - Telecommunications | 5 | 422,265 | - | 10/49 | - | 42,680 |
| <u>Poland</u> | | | | | | |
| POL-69-011 - Telecommunications | 10 | 42,459 | - | 3/4.5 | - | 9,065 |
| <u>Portugal</u> | | | | | | |
| POR-77-005 - Assistance in Telecom. and Postal Training | 3 | 150,000 | 1/1.5 | - | - | 6,477 |
| <u>Yemen Arab Republic</u> | | | | | | |
| YEM-68-009 - Adviser, Radio-communications and Telephony | 10 | 508,120 | 2/18 | - | a) 1,573 | 82,571 |
| YEM-74-011 - Training in Telecommunication Systems, Technology and Administration | 4 | 92,230 | - | 4/38 | - | 13,402 |
| <u>Czechoslovakia</u> | | | | | | |
| CZE-73-001 - Modern Techniques in Telecommunications | 5 | 24,093 | - | 1/2 | - | 4,438 |
| CZE-77-001 - Participant to CODEVTEL Seminars | 1 | 5,500 | - | 1/0.5 | - | 2,597 |

Table 1 (cont.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|-----|-----------|--------|-----|----------|---------|
| Europe and Middle East (cont.) | | | | | | |
| <u>Turkey</u> | | | | | | |
| TUR-75-069 - Development of Training in Telecoms. | 3 | 344,920 | 1/10 | 2/2 | - | 49,396 |
| <u>Regional Projects (Middle East)</u> | | | | | | |
| REM-75-027 - Feasibility Study/Preinvestment Survey for the Middle East Telecommunication Network | 4 | 1,179,758 | 9/93.8 | - | a) 1,423 | 464,308 |
| <u>Interregional Projects</u> | | | | | | |
| INT-74-017 - Curriculum Development in Telecommunication Training (CODEVTEL) | 5 | 1,189,382 | 5/60 | - | a) 6,967 | 375,594 |

Note : The figures given in column (5) represent the number of individual experts.
The figure indicated in column (8) shows the total actual expenditure on each project during the year and includes also miscellaneous expenses not specified in columns (4), (5) and (6).

1. financed from UNDP Special Fund for Least Developed Countries (LDC).
- 2) As United Nations Volunteer served for 6 months in the project.

Table 2

PROJECTS IMPLEMENTED BY SUBCONTRACTORS DURING 1977

| TITLE OF PROJECT | PARTICIPATING COUNTRY(IES) | VALUE OF CONTRACTS US \$ | CONTRACTOR | MAN MONTHS 1977 2) | AMOUNTS PAID IN 1977 US \$ |
|---|--|--------------------------|---|--------------------|----------------------------|
| A. <u>Contracts Signed in Prior Years</u> | | | | | |
| National Telecommunications Development Planning-NIR-72-010 | Nigeria | 600,000. ¹⁾ | Swedtel, <u>STOCKHOLM</u> (Sweden) | 10/33 | 132,120. ³⁾ |
| Telecommunication Link between Banjul and Koalack-RAF-71-255 | Gambia and Senegal | 436,000.- | Thomson - CSF, <u>LEVALLOIS-PERRET</u> (France) | - | 45,924. ³⁾ |
| Supply and Installation of an HF-Radio Telephone and Telex Link between Lesotho and Kenya (FIT) 9-LES-75-01 | Lesotho and Kenya | 388,850.- | Cable and Wireless Co. <u>LONDON</u> (United Kingdom) | - | 148,879. ³⁾ |
| B. <u>New Contracts Signed in 1977</u> | | | | | |
| Reorganization of Telecommunication Services in Lebanon LEB-77-027 | Lebanon | 200,350.- | Bell Canada International Management Ltd. <u>OTTAWA</u> (Canada) | 5/15 | 200,350.- |
| Survey of Radio Relay Link Installation in Guinea FIT-9-GUI-77-01 | Guinea | 30,000.- | Tappy & Duttweiler <u>VEVEY</u> (Switzerland) | 1/1 | 10,704.- |
| Preinvestment Survey of Inter-Country Links in Central and East Africa-RAF-73-076 | Burundi Malawi - Tanzania Mozambique and Zambia | 23,000.- | J.A. Story and Partners <u>MITCHAM</u> (United Kingdom) | 1/3 | 7,773.- |
| National School of Telecommunications, Sahr (construction of premises)-CHD-75-021 | Chad | 373,493.- | Entreprise tchadienne de construction (ETC) <u>N'DJAMENA</u> (Chad) | - | 373,493.- |

1) Amount revised in 1977.

2) Where no man/months are indicated, the field work has either terminated or not yet started.

3) Final payments.

ANNEX 7

ARREARS *

(as of 31 December 1977)

| | Years | Contributions | Publications | Total |
|---|---------|---------------|--------------|------------|
| Angola (People's Rep. of) | 1975-76 | — | 9,662.80 | 9,662.80 |
| Argentine Republic | 1976 | — | 10,562.40 | 10,562.40 |
| Benin (People's Rep. of) | 1975-76 | 11,579.65 | 7,733.— | 19,312.65 |
| Bolivia (Rep. of) | 1973-76 | 20,489.95 | 6,274.40 | 26,764.35 |
| Cameroon (United Rep. of) | 1976 | — | 5,135.50 | 5,135.50 |
| Central African Empire | 1974-76 | 133,583.20 | 27,101.30 | 160,684.50 |
| Chile | 1976 | 7,745.40 | 444.50 | 8,189.90 |
| Costa Rica | 1975-76 | 3,668.55 | 1,524.20 | 5,192.75 |
| Ivory Coast (Rep. of the) | 1976 | 19,195.05 | 20,372.05 | 39,567.10 |
| Cuba | 1975-76 | — | 78,016.— | 78,016.— |
| Dominican Rep. | 1973-76 | 217,610.85 | 14,644.05 | 232,254.90 |
| Egypt (Arab Rep. of) | 1975-76 | — | 10,946.60 | 10,946.60 |
| Ecuador | 1974-76 | — | 35,326.85 | 35,326.85 |
| Guinea (Rep. of) | 1976 | 23,620.10 | 11,102.60 | 34,722.70 |
| Guyana | 1975-76 | — | 5,515.70 | 5,515.70 |
| Iran | 1975-76 | — | 59,740.15 | 59,740.15 |
| Italy | 1976 | — | 197,200.— | 197,200.— |
| Democratic Kampuchea | 1971-76 | 264,735.— | 25,815.65 | 290,550.65 |
| Kenya (Rep. of) | 1974-76 | 560.20 | 8,278.70 | 8,838.90 |
| Lao People's Dem. Rep. | 1971-76 | 11,806.15 | 1,084.— | 12,890.15 |
| Liberia (Rep. of) | 1972-76 | 188,148.65 | — | 188,148.65 |
| Madagascar (Dem. Rep. of) | 1972-76 | — | 15,394.80 | 15,394.80 |
| Malawi | 1976 | 5,597.85 | — | 5,597.85 |
| Mauritius | 1974-76 | 5,763.40 | 1,852.15 | 7,615.55 |
| Mauritania (Islamic Rep. of) | 1975-76 | 54,790.35 | 4,006.10 | 58,796.45 |
| Mexico | 1976 | — | 20,159.80 | 20,159.80 |
| Nicaragua | 1976 | 44,936.70 | 3,438.80 | 48,375.50 |
| Nigeria (Fed. Rep. of) | 1975-76 | 282,219.25 | 31,057.95 | 313,277.20 |
| Uganda (Rep. of) | 1973-76 | 585.35 | 14,418.95 | 15,004.30 |
| Panama (Rep. of) | 1972-76 | 173,151.75 | 23,822.45 | 196,974.20 |
| Paraguay (Rep. of) | 1972-76 | 10,523.75 | 22,358.50 | 32,882.25 |
| Philippines (Rep. of the) | 1973-76 | 23,185.90 | 36,066.40 | 59,252.30 |
| United Kingdom of Great Britain and Northern Ireland | 1976 | — | 5,368.— | 5,368.— |
| Rwanda (Rep. of) | 1973-76 | 1,160.45 | 22,493.90 | 23,654.35 |
| Sierra Leone | 1975-76 | 125,451.10 | 4,595.30 | 130,046.40 |
| Somali Dem. Rep. | 1974-76 | 18,514.95 | 3,975.80 | 22,490.75 |
| Sudan (Dem. Rep. of the) | 1975-76 | 105,174.45 | 35,980.15 | 141,154.60 |
| Sri Lanka (Ceylon) (Rep. of) | 1976 | 5,763.40 | 10,097.10 | 15,860.50 |
| Syrian Arab Republic | 1974-76 | 5,597.85 | 3,111.30 | 8,709.15 |
| Chad (Rep. of the) | 1970-76 | 277,283.35 | 15,157.80 | 292,441.15 |
| Tunisia | 1976 | — | 13,814.— | 13,814.— |
| Uruguay (Oriental Rep. of) | 1973-76 | 2,636.60 | 7,372.65 | 10,009.25 |
| Union of Soviet Socialist Republics | 1976 | — | 20,453.95 | 20,453.95 |
| Yugoslavia (Soc. Fed. Rep. of) | 1976 | 11,526.85 | — | 11,526.85 |
| Zaire (Rep. of) | 1973-76 | 213,320.75 | 125,829.70 | 339,150.45 |
| Zambia (Rep. of) | 1976 | 3,631.55 | 6,700.— | 10,331.55 |

* This list mentions only amounts above 5,000 Swiss francs.

| | Years | Contributions | Publications | Total |
|---|---------|---------------|--------------|--------------|
| Argentina — Prefectura Naval | 1970-76 | | 7,466.— | 7,466.— |
| Brazil — Livraria Interciencia Rio | 1976 | | 6,340.— | 6,340.— |
| Egypt — Radiocommunications | 1975 | | 9,971.40 | 9,971.40 |
| Spain — Hispano Radio Maritima SA, Madrid . . | 1976 | | 12,639.— | 12,639.— |
| United States — Transport Office, Fort George . | 1974 | | 8,702.80 | 8,702.80 |
| — ITT World Communic. Inc., New York . . . | 1976 | | 5,484.10 | 5,484.10 |
| — CCA Electron. Corp., Silver Spring | 1973-74 | 16,157.25 | | 16,157.25 |
| — Federal Communic. Co., Washington | 1975 | | 14,343.60 | 14,343.60 |
| — US Army | 1972-75 | | 7,999.50 | 7,999.50 |
| — Navy Finance Center | 1971-75 | | 5,292.20 | 5,292.20 |
| — Naval Regional Finance Center | 1975 | | 34,634.45 | 34,634.45 |
| France — Rank Xerox, Montrouge | 1976 | 9,823.— | | 9,823.— |
| Italy — Honeywell Inf. System | 1975 | 9,731.85 | | 9,731.85 |
| Kenya — East African External Telecom. Co. Ltd., Nairobi | 1976 | 26,748.65 | 12,292.10 | 39,040.75 |
| Liberia — Telecommunic. Corp. | 1972-76 | | 12,787.55 | 12,787.55 |
| Nigeria — Nigerian External Telecom. Ltd., Lagos | 1974-76 | 546.— | 7,307.— | 7,853.— |
| Uganda — Radio Uganda, Kampala | 1974-76 | | 6,618.75 | 6,618.75 |
| Peru — Min. Marina | 1975 | | 7,731.65 | 7,731.65 |
| Portugal — Obras Publicas e Comunicacoes, Lisbon | 1975-76 | | 36,229.15 | 36,229.15 |
| — SEMA Electronicas | 1972-76 | | 38,224.25 | 38,224.25 |
| United Kingdom — Cable & Wireless Ltd., London | 1974-76 | | 6,110.30 | 6,110.30 |
| — Potter Ltd., London | 1974-76 | | 37,287.15 | 37,287.15 |
| South Africa (Rep. of) — Permanent Mission, Geneva | 1976 | | 10,793.— | 10,793.— |
| Yugoslavia — Elektronska Industr., Belgrade . . . | 1971-76 | 96,497.45 | | 96,497.45 |
| Zaire — Service aéronautique civil, Kinshasa . . . | 1971-76 | | 5,706.90 | 5,706.90 |
| Rhodesia | 1966-76 | 489,600.— | | 489,600.— |
| | | 2,922,662.55 | 1,277,966.85 | 4,200,629.40 |
| Other debtors | | 8,784.60 | 279,433.60 | 288,218.20 |
| Total | | 2,931,447.15 | 1,557,400.45 | 4,488,847.60 |

