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A public radio call system

H. Maag, Berne

This article sets out the structure and technical design of a nation-wide radio call system connected to the public telephone network. After an introduction into the general working of the system the individual sectors of the system, call centre, transmitters and receivers, are described. Then, comments on the first experimental installation in Berne are made.

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Numeric calculation of typical transmission distortions in microwave links. Survey of applications

W. Fawer, Berne

With the aid of typical amplitude and phase responses the influence of linear distortions on an FM signal is calculated and measured. The tests undertaken have shown that the magnitude of these transmission distortions do not primarily depend on the maximum value of the variations of the response curve in the FM channel, but on its shape. The author goes on to explain that certain relations exist between the tolerances of the FM channel and those of the demodulated signal. The problem of distortion addition is also given attention.

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Construction of an underground distribution chamber and a tunnel linking trunk exchanges in Lausanne

A. Rossier, Lausanne

The extension of the network and the growth of telephone traffic in the Lausanne area necessitated the construction of a new building to accommodate the requisite technical equipment. This building is situated at a distance of some 500 m from the St. François exchange. The article describes the problems posed by the construction of an underground distribution chamber and of a tunnel linking the two buildings. The difficulties encountered at the beginning of the construction work called for the application of building methods rarely employed in Switzerland, which are briefly outlined.

News Items

Postal service

On 1 March the Swiss transport enterprises, which include the PTT, started to issue, on an experimental basis, a **young people's half-fare season ticket** and, for tourists resident abroad, a **Swiss holiday pass**.

Recently the PTT have begun to use **television for advertising their postal cheque service**. The first of a total of three spots was broadcast in February and in March.

The **postage revenue** (stamps sold, franking machine impressions, prepayment in money, lump prepayment of postage), which

accounts for approximately $\frac{1}{3}$ of the total receipts of the postal service, rose by 23.7 million francs or 3.6% in 1971 as compared with the previous year, reaching a total of 688.3 million francs. The eight philatelic bureaux sold stamps and stationery worth 29.1 million francs, 19% more than in 1970 (NABA block sale).

A **transcontainer service** for letter post items has been introduced **between Switzerland and the United States**. The new mode of mail shipping enables considerable savings to be made. A large-capacity container for steamship transport holds more than 500 mail bags.

An **agreement on the postal service between Switzerland and the Arab Republic of Egypt** has been signed, which is to promote technical co-operation, more particularly through the exchange of experts and trainees.

Telephone service

The **prototype exchange HS 68** of Hasler Ltd., Berne, which has been installed at Schüpfheim, has been undergoing 'mass testing'. It is scheduled to be placed into trial operation towards the end of this year. HS 68 works with adhesive reed contacts and a central marker.

108.2 million minutes or 62.4% of **Switzerland's total international traffic** of 173.4 million chargeable minutes was handled automatically in 1971. Of this percentage border traffic accounted for 11.9 %, and international subscriber dialled traffic for 50.5%.

According to the **world telephone statistics** of ATT, **Switzerland**, with 48.3 telephones for every 100 persons, continues to be the **country with the third-highest telephone density**, after the United States and Sweden. At the beginning of 1971 there were 273 million telephones around the globe, some 17.6 million more than a year before. With approximately 3 million sets, Switzerland had almost as many telephones as the whole of Africa (3.2 million), more than Central America (2.8 million), about half as many as the whole of South America (6.1 million). After Stockholm, Zurich and Geneva, with 78.6 and 69.9 telephones for every 100 persons respectively, rank highest in telephone density among cities in Europe.

Telegraph and telex services

The **ATECO system** is being placed in service according to schedule. At the end of February the Gentex positions of Finland (1), Norway (4), Italy (121), and the Federal Republic of Germany (96) were connected; with an average daily number of 12,000 telegrams ATECO handled about 90% of today's Swiss telegram traffic.

Over the new Europe-South Africa Atlantic cable, Radio-Suisse Ltd. has placed a **direct telegraph circuit to Johannesburg** in service. The Union of South Africa has taken up fully **automatic telex service** with

Switzerland; in the opposite direction preparations for direct subscriber dialling are under way.

Picture transmission trials have been conducted **between Switzerland and Japan**, for which satellite circuits have been found to be better suited than cable circuits with their numerous risks of being interrupted. Provided that appropriate operational and technical procedures are chosen, very good results can be achieved.

Radio and television services

Besides the 26 regular circuits of the Japan Pool, **ten supplementary satellite circuits** were made available mainly for radio broadcasts to Europe **during the Winter Olympics in Sapporo**; these additional circuits met with a very great demand.

In response to a campaign aimed at **radio and television licence evaders**, which was conducted in the German speaking part of Switzerland in January, 12,000 radio listeners and 8,000 television viewers have reported, which will result in additional licence fee revenue in the amount of 0.9 million francs.

12 microwave links between the new television studio of Zurich-Seebach and the Albis microwave station have been placed in service, so that the new facility can now feed in its programmes direct.

A **fourth colour pick-up mobile unit** has been made available to the Swiss television service by the PTT. It is being used by the television service of German and Romansh speaking Switzerland as their second colour unit.

In 1971 **some 464,000 radio sets and 194,000 television sets (including 55,000 colour sets) were sold in Switzerland**. These record figures exceed the new licences issued in the same year by 320,000 and 40,000 units respectively.

The radio and television services of the Regional Telephone Directorates handled **8616 fault reports** in 1971. 2169 sources of disturbance were traced and eliminated; in the case of 4,200 reports (46%), receivers or antennas were traced as sources of disturbance, while in 1,800 instances disturbance was caused by out-of-range conditions.

921 (26%) of 3563 **outside antennas** inspected in 1971 were found to be **technically defective**.

Miscellaneous

From the Swiss PTT accounts it appears that the **Liechtenstein postal services** realized an operating profit of 321,000 francs in 1971 (485,000 francs in the previous year), without considering the proceeds from the sales of philatelic material by the official philatelic agency, which is independent of the Post Office. The operating profit of the **telecommunication services** in 1971 was 876,000 francs (1970: 780,000 francs). From these amounts, the costs of services rendered by Liechtenstein must be deducted.