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On our cover photograph:

### The Largest Rotary Antenna in the World

Sottens, one of the Swiss national broadcasting stations, has been equipped with a 500 kW short-wave transmitter and rotary antenna for use by the Swiss Short-Wave Service. This installation, which will probably be put into operation this month, is intended for broadcasting to those continents that cannot be covered adequately by the present facilities.

The rotary antenna, designed to radiate in any chosen direction, consists of two wide-band curtains with 16 half-wave dipoles each. The curtains and their common reflector are hung between two 184-foot-high round-steel pylons mounted on a 17-foot-high turntable. The turntable is supported by eight rollers running in a circular crane-rail of 189 feet diameter. The whole construction, which weighs 133 tons, is driven by two electric motors and can make a full turn in 15 minutes.

Two firms, Willi Bühler Ltd., Berne (steel construction) and AEG-Telefunken, Frankfurt/Berlin (h. f. facilities), have co-operated in the development of this rotary antenna, which is at present the largest installation of its kind in the world.

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### Corrosion of Lead-covered Cables (15) To what extent may lead-covered cables be affected by ac and dc voltages before corrosion sets in?

by K. Vögtli, Berne

Corrosion tests have shown that if ac and dc voltages are simultaneously applied to lead-covered cables, the effect of a 4 V<sub>eff</sub> ac voltage on lead is less harmful than a shift of the potential of + .1 V, which clearly causes corrosion. The author outlines the possibilities of applying this result in practice.

p. 360...380

### Telephone Installations in Business and Industry

by P. Günter, Berne

Progress in the design of utilitarian structure forces the electrician to adapt his methods of installation constantly to new requirements. The present article outlines the basic differences in the distribution of telephone lines in industrial, administration and

office buildings, and stresses the importance of wall and floor ducts as a substitute for buried conduit. Finally, information is given on the prospects of new installations including temporarily approved floor-duct systems and connection boxes for large offices.

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### Fire Precaution in Telephone Exchanges

by E. Plüss, Berne, and G. A. Purt, Männedorf

Considerable alterations in the structure and operation of telephone exchanges in recent years have called for re-examination of approved fire precaution measures, and for trials of new fire alarms. Extensive tests in a modern telephone exchange have shown that combustion gas fire detectors can be universally used. Moreover, it has been found that fire precaution measures can be further improved by including optical smoke detectors.

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### Laboratory-type PCM Switching Equipment with Programme Control

by R. P. Lorétan and J. Röthlisberger, Berne

By means of existing PCM system components a simple model of a PCM switching system has been built in the laboratories of the PTT Research Department. This equipment, which can be operated either as an automatic tandem exchange or a private automatic exchange, is controlled by a small stored-programme computer.

## News Items

### Posts

A season ticket for the Tessin region has again been sold since Easter 1971. This ticket is valid for some 1200 kilometres of Tessin postal coach routes, for the alpine coach routes leading to this region, and for some international lines.

'Up to Date' is the slogan printed on a series of publicity posters for the Swiss Postal Cheque Service. They will be displayed in the post offices from April to June.

At this year's **National Stamp Exhibition**, which will be held in Basle from 4th to 13th June, the Swiss PTT will for once not display rarities, but present an exhibition on 'St. Gotthard in the Basle History of Posts and Transport'.

### Telephone

A 4 GHz microwave link for 1800 channels has been put into operation between Lausanne and Sion.

Semi-automatic telephone service has been opened between Switzerland and **Portugal**. Six lines are available in each direction. Fully automatic service will probably be introduced in 1972.

The telephone service has been extended to British Honduras. **From Switzerland 190 countries and islands can now be reached by telephone.**

### Telegraphs, Telex

The first phase of operation of the 'ATECO' message switching centre for the Swiss public telegram service began on 10th May.

During the 1971 **Icehockey World Championships** in Switzerland, the temporary telecommunication offices of Berne, La Chaux-de-Fonds, Geneva and Lyss handled telex messages totalling 13,525 minutes, and press telegrams amounting to 21.3 kilometres of punched tape.

Fully automatic **telex service** has been introduced with **Rhodes** (via Athens), and semi-automatic service with **Cyprus**.

### Radio, Television

During the 1971 Icehockey World Championships, Swiss TV broadcast **55 games** for Eurovision. For this purpose, the PTT provided 61 mobile microwave links.

On 4th May, a new programme scheme was introduced in the **Swiss Wire Broadcasting Service**. Of the 6 lines available, one is now used for broadcasting pop music, one for classical music, and one for the spoken word, while the remaining 3 lines carry programme 1 or 2 of the national broadcasting stations.

Four firms have been invited to submit an offer, based on a PTT specification, for the **future Swiss satellite earth station**.