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## Summaries

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### The Swiss PTT Research and Development Division

W. Klein, Berne

The Division's main aims and responsibilities are the practical application of new knowledge obtained from science, research and development in all fields associated with PTT work; applied research, mainly in telecommunications; and the coordination and promotion of scientific efforts by appropriate contracts awarded to industry and universities. In addition, the Division is concerned with the inspection and acceptance of supplied materials; standardization, equipment specifications, and other work associated with the operation of services. At present the Division numbers 240 staff, and its expenditure for actual research and development amounts to ¼ % of annual telecommunication investments.

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### The New PTT Research and Development Building

F. Waber, Berne

This building, which has recently been completed, is the last in a complex forming the new PTT Technical Centre at Berne. The 86 m high structure consists of 17 storeys, working-deck, roof laboratory and a microwave and TV aerial platform. The ground-plan, which provides for 94 m<sup>2</sup> office and 230 m<sup>2</sup> laboratory space as well as lifts, stairs and ducts, is identical for most floors.

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### Measurement of Thermal Resistance in Semiconductor Circuits

C. Beguin, Berne

If a semiconductor circuit is to be properly dimensioned, the blocking layer temperature must, under given operating conditions, be kept within specified limits. As there is often little information available on how to determine blocking layer temperatures under

pulsing conditions, the author describes a suitable measuring procedure as well as the equipment required. The method outlined makes use of transient thermal resistance enabling the designer to measure blocking layer temperatures at any point of a pulse shape.

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### Fault Localization in Telephone Exchanges

W. Grundbacher, Berne

With new switching systems the requirements for monitoring and test equipment are increasing. In the present article the author briefly surveys current circuit monitoring facilities and outlines developments in this field.

## News Items

### Telephone

In March the **TE 404 single-slot coinbox telephone** was introduced in Switzerland. This most recent model, which accepts 20-centime coins only, is intended mainly for areas with heavy local traffic.

At **Rapperswil (SG)** a **fully automatic morning and alarm call system** with a capacity of 1120 orders has been placed in operation.

The PTT has increased its **satellite circuits for the Switzerland-USA telephone service** by 10 to 67, which are supplemented by 31 cable circuits and 3 radio channels.

Switzerland will purchase the indefeasible right of user of **200 telephone circuits** (including 68 for Radio-Suisse Ltd) in the planned **TAT 6** cable.

Swiss telephone operators can now **dial calls to Chile direct** via the automatic transit exchanges of Frankfurt/Main and Rome.

On 1 April **telephone service with the Vietnam Democratic Republic** (North Vietnam) was opened via Moscow.

### Telegraph, Telex

**Direct Gentex service between Switzerland and Bulgaria** was opened in April.

In March a **12-channel fm vft system** was opened between **Bucharest and Zurich** to replace the indirect route via Budapest.

**Telex service to Iceland, New Zealand, Tunisia, Cyprus and Israel** was converted to **automatic working** in March. Overseas subscriber dialling from Switzerland and the Principality of Liechtenstein is now available to 19 countries.

### Radio, Television

In March, **2 new TV stations** for the German-spoken Swiss programme, and a **6-GHz microwave link** for 4 TV and 1 spare channel were put into operation in the Grisons.

During **58,000 inspections** in 1972, Swiss PTT detected **11,569 unlicensed receivers** (8,444 radios and 3,125 TV sets).

### Miscellaneous

**The first training course for heads of customer advisory services** of posts and telecommunication regions was held at Interlaken in March. Its aim was to familiarize members with modern methods of customer care.

In March, representatives of the PTT administrations participating in the **Japan Pool** met at Engelberg for their **annual conference** with delegates from KDD, the Japanese overseas telecommunication organization, to discuss technical, operational and financial questions.

With a view to the future potential of **optical information transmission**, Swiss PTT is concentrating substantial efforts on research in this field.

The **Zurich-Donaueschingen and Zurich-Lugano coaxial cable systems** are to be converted from 6 to 60 MHz operation in 1976/77.

The Swiss PTT Research Department, participating in the development of an **integrated telecommunication system** (IFS 1), is at present dealing with **subscriber plant**, such as data multiplexers and digital telephone sets capable of being combined with visual display units.

## In the next issue the following articles will be published

Muri J./Bühler H./Graf A. International Telephone Subscriber Dialling in Switzerland

Klein W. The Swiss PTT Research and Development Division