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## WHERE RAILWAYS PAY THEIR WAY

In Switzerland rail traffic is increasing both in volume and profitability. How is it done?

By CECIL J. ALLEN

In these days of uncertainty as to the future of British Railways it is refreshing to spend a month in a country in which there is no suggestion of closing down lines or stations and in which the rail traffic, both passenger and freight, continues steadily to increase.

The country is Switzerland where the railways have always been regarded as providing an indispensable service and have been treated accordingly. Moreover, since the Swiss Government wiped out most of the debt due to electrification, the Swiss Federal Railways have operated continuously at a profit.

For many years it has been a principle that no bus services shall compete with the railways between the cities and towns. The Swiss Post Office works a vast number of road services with its familiar yellow motor-coaches, but these all radiate from railway stations rather than run parallel to the railway lines, and thus no community is without direct access to the railways.

Apart from private cars, therefore, journeys from town to town must be made by train, and this makes it profitable for both the Swiss Federal Railways and the many minor lines to run frequent and well-patronised trains each day.

### Fixing Fares

It is true, on the other hand, that many of the smaller lines, especially those serving the mountain resorts, would find it impossible to balance their budgets were it not for subsidies from the Federal Government, the cantonal administrations, individual communes, and, in some cases, even from hotels.

In the past some of the railways, to avoid losses, based their fares between stations on distances considerably greater than the length of the line, so that travel was expensive. But in 1959 the Federal Government abolished these "tariff kilometre" arrangements, and thus lowered these fares; the difference between the former net receipts and those under the new fare system has since been made good by subsidy.

On a line such as the Furka-Oberalp, running over the high mountain passes through country largely unpopulated but of no small strategic importance, the present fares are no more than two-fifths of what they once were. But the increase in traffic which has followed is steadily making the operation more profitable.

In these conditions it is not surprising that, apart from slight setbacks in 1949 and 1958, Swiss railway passenger traffic has shown an unceasing increase. In ten years alone, from 1950 to 1960, passenger receipts mounted from £22m. to over £36m., and they are still going up.

This is not happening automatically. The Swiss railways are out to "sell kilometres". One way familiar to British tourists is the holiday ticket, with its cover charge, and then a greatly reduced charge per kilometre for the whole itinerary.

Annual season tickets for the entire network may be paid for by monthly instalments. Cheaper country-wide season tickets, with an appropriate cover charge, for one, three or twelve months, permit the holder to make all his journeys at half fare. There are tickets covering a total of from 100 to 500 km., at a much-reduced rate, which during

a specified period can be used up bit by bit until the whole distance has been completed.

These and many other similar inducements help to finance the railways, while proportionately to the extent to which the facilities are used the passenger finds that what he is paying per kilometre becomes progressively less and less.

It is not so easy for the Swiss railways to control road freight competition, but here nature comes to their aid. In Central Europe the routes through Switzerland are much the shortest between the neighbouring countries, but they lead for the most part over high passes which are a severe strain on car engines and drivers. And in winter snow closes these passes for months on end, so that the railway tunnels are the only way through.

Freight traffic, therefore, is also showing a steady increase. The Gotthard main line, chief highway between both Southern Germany and Eastern France and Northern Italy, is today carrying 2½ times the tonnage that it did ten years ago, and to pack any more trains on to it is becoming difficult.

The 9½-mile Gotthard tunnel, once a bottleneck, has been divided into thirteen signalling sections, so that up to five or six trains can be passing through it in each direction simultaneously. This is an invaluable help in winter, when snow stops all road traffic over the Gotthard pass, and the density of the service through the tunnel is greatly increased by all the road vehicles also having to be transported on special trains through it.

It is nothing unusual to see trains running the length of the Gotthard line carrying up to 250 motor cars on double-decker wagons from German makers to their Italian agents or vice versa.

### New Projects

Other bottlenecks are caused by frontier formalities at Basle and Chiasso, but these are being eased by big and costly additions to the Customs facilities and to the marshalling yards at both places. Remaining single-line sections of the connecting route between Basle and Arth-Goldau are to be doubled and new flyovers built at Brugg and Rotkreuz to facilitate the flow of traffic. Powerful 6,000-h.p. locomotives in pairs are working 1,200-ton freight trains up the long 1-in-40 gradients to the Gotthard tunnel at the same maximum permitted speed — 47 m.p.h., so limited because of the constant curvature — as the passenger trains.

But all this will soon be insufficient to cope with the increasing traffic. Serious consideration is therefore being given to the possibility of cutting out the summit and its steep and sinuous approaches by a new "base tunnel" from Amsteg to Giornico, 28 miles long and at a maximum depth of some 7,000 feet when under the crest of the Alps.

If this proves technically and financially possible, it will increase the line's capacity, permit very considerable acceleration, and do away with much costly maintenance of bridges and sharply-curved tracks.

Other major Swiss railway projects are also being carried out at the present time. The biggest is the ten-year complete reconstruction and enlargement of the main station at Berne, on which, including new postal installations

and a large garage, some £9m. is being spent. To this work the Government and the Canton and city of Berne are both contributing.

Subsidies of this kind are a general principle when Swiss stations are rebuilt or other railway improvements carried out. They are extended also to the privately-owned lines, which together constitute roughly half the total mileage of the country.

For example, the costly link-up now approaching completion between the Swiss Federal Brünig line at Hergiswil and the Stansstad-Engelberg Railway, which for the first time will make possible through-running between Lucerne and Engelberg, is being financed in this way.

#### Motive Power

The vast-hydro-electric resources of an Alpine country like Switzerland have been an immeasurable benefit to the railways, the entire electrification of which has now been completed. The Swiss Federal Railways have never departed from their tried and trusted use of 15,000v. alternating current, and their modern motive power practice is of the most advanced description.

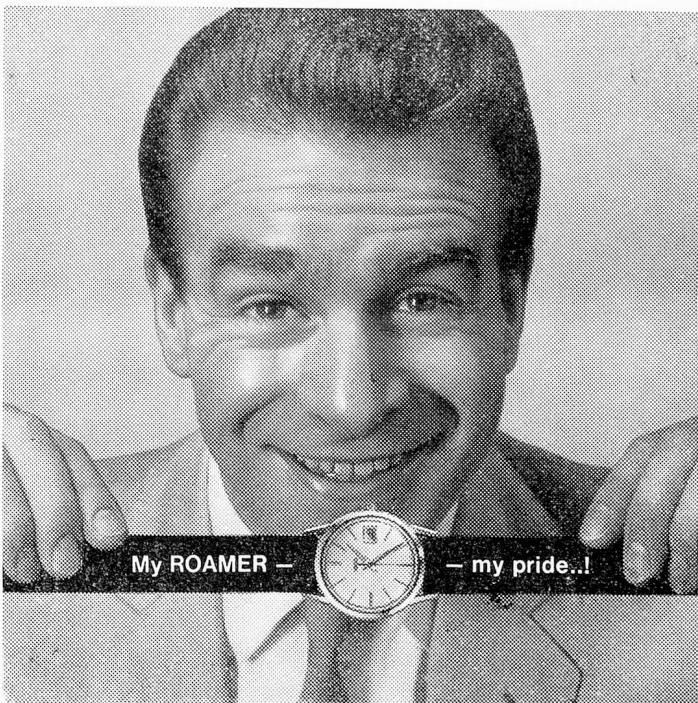
Their latest "Trans-Europe-Express" or "T.E.E." trains, on the Milan-Zurich-Paris service, are the first in the world to be able to work with four different types of electric current — the Swiss 15,000v.a.c., the Italian 3,000-v.d.c., and the French 25,000v.a.c. and 1,500 v.d.c.

It is the reliability of Swiss motive power that makes possible the exceptional precision of railway working in that country, and very short turn-around times at terminals that enable rolling stock to be put economically to the maximum use.

One of the frequent inter-city expresses will leave Geneva and travel across the country through Lausanne and Bern to Zurich at an average speed not far short of a mile a minute, despite the formidable gradients and curvature of this busy main line. Twenty minutes or so after arrival it will be starting back again to Geneva, with the driver in front but the locomotive now in the rear, pushing from 10 to 12 coaches or even more and at speeds up to 80 m.p.h. — a "push-and-pull" operation on the grand scale which for years past has been operated with complete safety.

With all these railway developments there has been no neglect of the roads of the country; new major trunk roads in all directions are being built. But the Swiss are justifiably proud of their railways and it is obvious that the nation has complete faith in their future.

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