



# RADIO TRADE

## IN FOREIGN COUNTRIES

### Sweden



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*The position of broadcasting in Sweden is clearly defined, and this fact makes for stability in the wireless industry. The country offers an excellent market for British goods*

UP to the present it has been my lot to speak of countries where a state of great instability exists with regard to the organization of broadcasting.

In Sweden, things are quite different. Here we have a country where the broadcasting position is clearly defined. It might be said that, together with Great Britain and Germany, Sweden stands foremost in the world in regard to its broadcasting service, and a visitor to that country cannot help but be impressed by the way in which the Government has dealt with radio problems.

I do not hesitate to say that although our own service is often quoted by those running it as the best in the world, we have more than one thing to learn from our Scandinavian friends. Many people may even say that Sweden is definitely ahead of us. As we have seen before, no country can offer a good market for radio goods, whether complete sets or components, if the organization of the broadcasting service is unstable. Nobody knows what the future holds, and consequently factors fight shy of ordering large stocks of materials, of committing themselves to accepting agencies, or of investing any capital in a venture where any new legislation may upset existing or prospective arrangements. In Sweden there is nothing of this.

#### The Swedish Broadcasting Service

The Swedish broadcasting service became stabilized at the beginning of 1925. A licence fee is levied upon all listeners. This licence amounts to 10 kronen, which is approximately 11s. in our currency. This licence is not for one year date to date, but is for the current year, renewable on January 1st. Funds provided by licences are entirely devoted to broadcasting, half going to the Government and the other half to a private company called the Radiotjänst Aktiebolaget. Radiotjänst, under the directorship of Captain Gustaf Reuterswärd, arranges only the programme side of the broadcasting service. The Government, for the 5 kronen per listener that it receives, bears the responsibility for all the engineering, electrical and general technical side of the enterprise. Thus, we have both parties doing something for the money they receive.

Placing the provision of programmes in the hands of an independent enterprise, secures the advantage of having this service open to private initiative, and therefore governed by a body of men who are anxious to please the listener

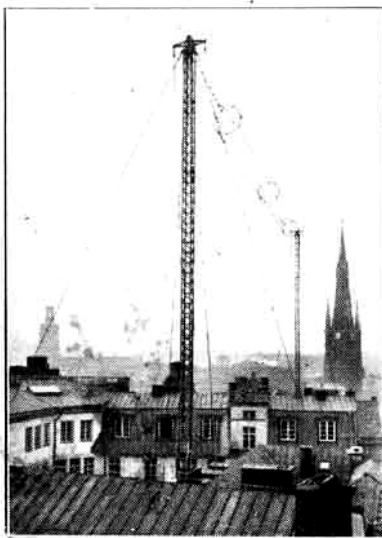
in every way, and to seek for novel and original transmissions.

As an example of some of the novel transmissions which have been broadcast from the Swedish stations I might mention the recent launching of one of the Swedish Transatlantic boats. Even the sound of the breaking of the bottle of champagne which was thrown at the ship's bow, baptising her "Gripsholms," was broadcast. Another transmission of note this year was that of the classical Ski race of Vasa.

#### Advantages of the System

The fact of placing the entire electrical and technical operating side in the hands of the Post Office also presents considerable advantages. After all, broadcasting and broadcasting stations may sometimes be useful in case of national emergency, and it is only right that the Post Office officials should have an opportunity of training their staff to man all broadcasting stations. This department is also in a position to supply a highly technical staff to operate the delicate gear indispensable to perfect running, and to be responsible for maintenance. It also provides an excellent link between the programme service and the Post Office for relaying by land lines. Simultaneous broadcasting has been practised in Sweden to a far greater extent than in any other country. The quality of Swedish simultaneous broadcasting is, in my opinion, a great improvement on our own. Although in some cases it has extended over a distance of twelve hundred miles, about three times the distance from London to Aberdeen, it is often difficult to differentiate between ordinary local studio transmissions and land line relay, and Mr. Siffer Lemoine, chief engineer of the Swedish service, must be congratulated on this achievement.

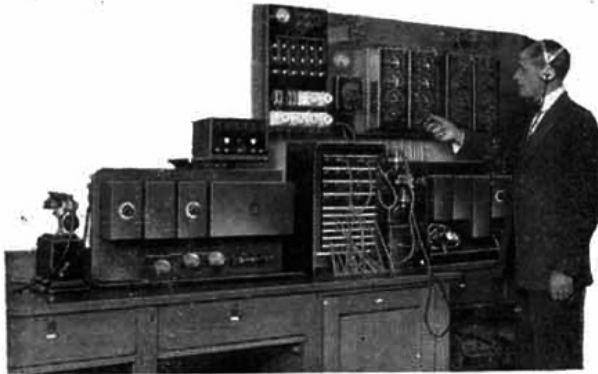
It was by an agreement dated October 3, 1924, that the Swedish Telegraphic Service authorised the erection of wireless broadcasting stations in Sweden, and at the same time came to an agreement with the Aktiebolaget Radiotjänst for the provision of programmes. Broadcasting under these conditions started on New Year's Day, 1925, on which date the first official wireless programme was transmitted simultaneously from the three stations Stockholm, Gothenburg and Malmö. The broadcasting authorities in Sweden have, like our own, specially studied the requirements of crystal listeners, but without losing sight of the needs of valve users.



The Masts and Aerial at the Stockholm Station

### The Location of the Transmitters

The position of the transmitting stations in the various Swedish towns received careful consideration from the postal officials, and as an example it might be mentioned that for Gothenburg, Malmö and Sundsvall the transmitting station itself is situated some three miles outside the town, thus permitting good local reception without undue interference when long-distance reception is sought for. The buildings were all designed by Carl Ackerblad, an architect of Stockholm. They are uniform in size, and contain the same number of rooms—a main room, a store room, and a battery



Mr. Erik Mattsson, the Chief Engineer of the Stockholm Station, is here seen in the Control Room

room on the ground floor, a cellar below for the heating and coal supply, and an upper floor, where are fitted the step-down transformers used to transform down the thirty thousand volt supply which feeds the station, and which arrives from the Northern water falls. The aerials of all the stations are T-aerials of "cage" form. The masts are of a patented type, designed by one of the Swedish postal officials, and are built up of simple triangulated members, which results in an exceedingly strong and at the same time very light construction.

### Relay Stations

Another point of note in the Swedish broadcasting service is the manner in which relay stations are installed, and here I suggest that we might learn something. In Sweden any town interested in wireless is permitted through its local association or other public fund to pay for the installation of a relay station. Once the relay station is installed, this station remains the property of the organization which has bought it, but the organization is relieved of all further responsibility. The main broadcasting company Radiotjänst immediately takes over the programme side, and the Post Office the engineering side. Programmes are supplied free of charge along the land line from one of the main stations, and the Post Office sends down qualified engineers to run the station, the local organization having no further expense whatever. Naturally, licences are paid by the local listeners, and the money received in this manner goes towards the upkeep of the service. This practice has been very successful in Sweden, and the result to-day is that Sweden possesses in addition to its five main stations, which are Stockholm, Gothenburg, Malmö, Sundsvall and Boden, no fewer than fifteen relay stations, and there are three further relay stations under construction. Twenty stations are thus at present working daily. When one considers that Sweden has only six million inhabitants, and that the latest census of listeners gives a figure for December 31, 1925, of one hundred and forty thousand, one realises that there is only one other country in Europe with a higher proportion of listeners per thousand inhabitants, and that is our own. To anyone who has listened for some considerable time to transmissions from the Swedish stations there will be no doubt about the quality of this country's relay system by land line.

### British-built Transmitters

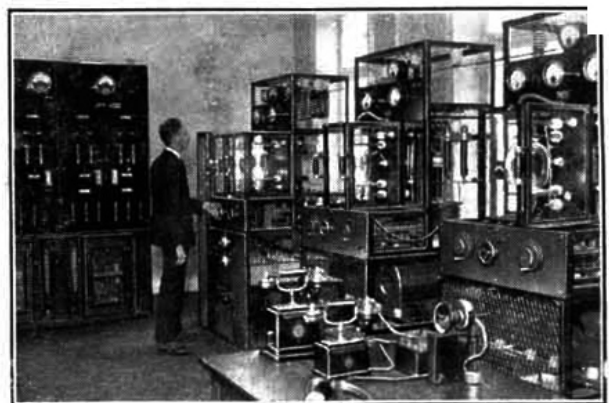
The majority of the Swedish stations have been built by British firms. The Stockholm transmitter is a Q-type Marconi, but all the other main stations, except Boden, which was erected by a German firm, are 500 watt installations, made, as are most of the relay stations' transmitters, by Standard Telephones & Cables, Ltd. The remaining relay stations were installed by the Swedish company, Svenska Radiobolaget.

In passing, it might be mentioned that Sweden holds the European record for short-wave stations. The new relay station, Karlskrona, which was opened a few weeks ago, uses a wavelength of 195 metres. Central European time is standard in Sweden, and this naturally renders it more difficult for listeners in this country to tune in the Swedish stations, which close at a rather early hour G.M.T.

One of the most important figures in the Swedish broadcasting service is Mr. Nils Holmberg, the programme director of the company and director of the Stockholm station. Mr. Holmberg was a very noted journalist in Stockholm before he undertook the direction of this station, and both in the papers and through the microphone he has become famous in his country. Mr. Natanael Broman is the musical director, and Mr. Sven Jerring the announcer and well-known "uncle" to the Swedish children. The studio of the Stockholm station is situated in the centre of the town, and the transmitting gear is placed on the other side of the street some two or three hundred yards away. Among the peculiarities of this station I might mention the fact that a special sounding double bell is always switched on during an interval. This enables listeners to recognise the station, and to tune in accurately and with ease during intervals.

### Tuning Notes

Another very interesting point is the manner in which tuning notes are produced. No tuning note, as we understand it, is sent out from the station when the transmission commences, but certain melodies are played on a "Celest piano." These melodies are from old Swedish folk songs, which are known to all Swedes. Mr. Holmberg told me that the idea was for any listener when tuning to hear one of the Swedish melodies, and thus recognise a Swedish station.



The Transmitter at Stockholm is of the Marconi "Q" type, having a power of 1.5 kilowatts

The excellent design and layout of the Stockholm installation may be traced to the fertile and active brain of the Stockholm station engineer, Mr. Erik Mattsson. There are a number of important wireless firms in Sweden, among which I might mention Aktiebolaget Baltic and Radio Joel Ostlind, but there is also a large market open for British-made wireless sets and components of all descriptions. British goods are held in high esteem.

February, 1926

The Wireless Dealer

### The Use of Crystal Sets

Crystal sets are used considerably in Sweden because of the great number of small relay stations, and I was glad to see some of our standard crystals, and also complete crystal sets on sale, especially "Brownies." This British make was very much in demand, and sets could be seen in many of the shops, showing that they were being extensively patronised in Sweden generally. The excellent export work carried out by the Brownie Wireless Co. is typical of what a great number

of our manufacturers should do in Sweden to-day. This firm has notices printed in Swedish, which are displayed in the shop windows. Instructions in Swedish, printed in England, also accompany all sets.

I was told by the director of Messrs. Aktiebolaget Nordstrom, who are the Swedish agents for this firm, that some ten thousand Brownie crystal receiving sets were at present in use in Sweden.

It is pleasing to note that some of our firms are go-ahead enough to succeed in conquering foreign markets and to outlive other competing countries, maintaining the Union Jack well in the wind. In the wireless shops, Germany and France are both represented, but not to such an extent as Great Britain. At one time Germany held the lead, but there is a marked tendency towards British wireless goods now. Probably no other country in Europe is more suitable as a market for British wireless goods than Sweden is to-day. American parts are filtering in, and will get a strong foothold in the future unless British manufacturers get busy.

### Home Constructors

There are a considerable number of home constructors in Sweden, too, and a very excellent technical journal called the *Radio Amatören*, which is published in Gothenburg.

Mr. Arvid Palmgren, a civil engineer, attached to the firm of ball-bearing manufacturers A. B. Svenskd, edits this paper with great ability, and his technical articles are quoted throughout Scandinavia. The Swedish stations often devote an hour or two at the end of their programmes to the relaying of foreign stations. Original reception of such stations is carried out at Kungsbacka. This is a Government station, used mostly for traffic with U.S.A., and the foreign programmes are taken by land line from Kungsbacka to Gothenburg and hence to the other stations. I was given the opportunity of listening to some of these re-transmissions while I was in the train between Stockholm and Gothenburg, and I was much impressed by the quality of the transmission. British stations are regularly re-broadcast in this manner, and this is all to the good, as propaganda of this nature helps considerably in the sale of our goods.

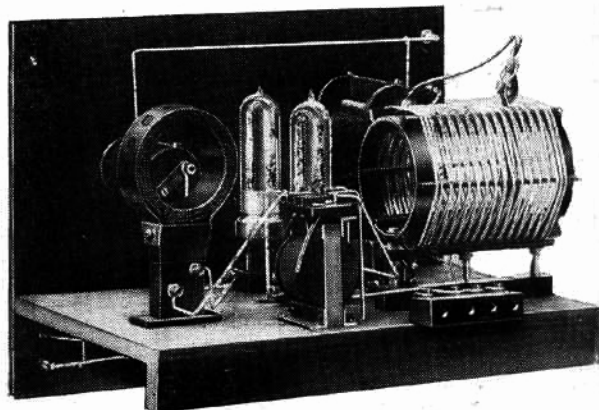
### The Gothenburg Station

The station at Gothenburg is a main station, and is run by Doctor Rabe, a very well-known personality in that city. The

transmitting gear of this station is situated some two or three miles outside Gothenburg, at Anggardsom, a prominent plateau, and I was given the opportunity of visiting it. I found it an excellent little installation in a wooden and concrete two-storey building, fitted with the usual compact and efficient Western Electric 500-watt transmitter. The studio, which is in the centre of the town, is well appointed. Gothenburg is considered the leading provincial station. It may, perhaps, interest readers to know that the budget of this station was the smallest of the five main stations last year. Listeners in Gothenburg are very keen on scientific lectures, and a special department has been created for dealing with these. It is in charge of Mr. G. Rahmn, one of the eminent professors of the Gothenburg University. This station holds a high reputation throughout Sweden for the interesting scientific and literary talks which are broadcast and relayed. The *Radio Amatören*, which I have previously mentioned, is a paper which is specially designed to satisfy the demand of the home constructor, and it is this paper especially that Swedish readers look to for the circuits to incorporate in their receivers. It is an excellent advertising medium, and British firms who are contemplating activities in Sweden should bear this fact in mind.

### Valves in Greatest Demand

The valves used in Sweden are mostly Philips and French Radio-Micro, but several English firms, realising the possibilities of this market, are beginning to introduce their goods, and among these firms I might mention Ediswan and Mullard, which valves are very well quoted in Sweden. The excise duty for importing radio merchandise is 10 per cent. of the value on all goods, and this cannot be considered exorbitant. Those Swedes who do not indulge in crystal sets are rather inclined to go to the other extreme, and build the more elaborate multi-valve sets, such as the neutrodyne or the superonic heterodyne. A Swedish firm has recently produced a superonic kit which has met with considerable success. In this case the whole of the parts are made in Sweden. The name of the firm is Radio A. B. Uno Sarnmark, and they have christened their set the Ultraheterodyne. Completely built up Ultraheterodynes are not placed on the market by this firm; their argument is that they think it is better for the listener to build up his set himself. They claim that no listener can be capable of working one of these instruments



The Wiring of the "Baltic" Reinartz receiver is well carried out

unless he is perfectly familiar with the connections, and is conversant with the instrument generally. This cannot be, they assert, unless it is home-built by the owner himself. There is a great tendency in Sweden at present to use accumulators for the high-tension battery supply, and there are two fairly important firms in Sweden who manufacture these batteries, but the demand is great and there is still room for British manufacturers to export these goods.



This Poster, which may be seen in many Swedish retail shops, is a good example of enterprise

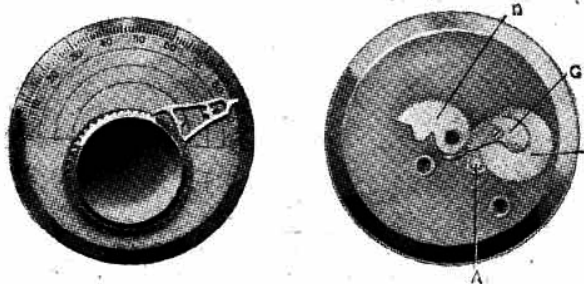


I would like to warn British manufacturers that it is useless to send to Sweden a lot of obsolete material, as the Swedish firms with which they will have to compete are manufacturing very high-class components.

#### **A Vernier Dial**

Among some of the specialities built by the Baltic Aktiebolaget I was shown a micro-adjuster vernier dial of very interesting design. The novelty consists in the fact that the gearing is variable, and ensures within the whole of the variation range a variation of frequency which is proportional to the rate of rotation of the dial. In other words, fitting such a dial to an ordinary condenser enables a straight line frequency variation to be obtained. This same firm has taken up the idea of selling envelopes containing the particulars for home constructors, and in this respect has adopted a system developed by Radio Press, Ltd. Another speciality of this firm is the production of low-loss crystal sets, which permit excellent reception on wavelengths as low as 140 metres. Air-spaced coils are used in these sets.

Wireless enthusiasts in Sweden have already passed beyond the stage which tolerates the use of the bright emitter valves, for instance. Only dull emitter valves have any market.



**This Vernier Dial, which incorporates variable gearing, gives a straight line frequency effect with an ordinary variable condenser**

With regard to coils, the honeycomb type of coil has been extensively used, but these components are manufactured in the country and there is no market for us at present.

#### **The Patent Position**

Sweden is a country which is very similar to Holland with regard to patents. There seems to be an entire disregard for patent rights. Quite recently the firm which represents Marconi's interest in Sweden, and which is called Svenska Radiobolaget, brought an action with regard to the payment of certain royalties for the use of reaction. The lawsuit failed.

#### **Loud-speakers**

Several types of loud-speakers have been copied in Sweden, but this has not affected the usual field for the British-made loud-speakers. Amplions, Browns, Sterlings may be seen on sale. The Kone loud-speaker, manufactured by Standard Telephones & Cables, Ltd., recently scored a success, as five of these instruments were ordered by the Swedish Broadcasting Company, who now use them as a guide to modulation. This British firm has made excellent use of the publicity attendant upon the securing of this contract, and all Swedish periodicals show photos of the five instruments, together with their amplifiers. The array looks imposing, and the wording is to the effect that Radiotjänst, after trying all makes, has chosen the above. The Swedish wireless market is wide open at present, and those interested in international trade should not lose a day. They should immediately realise the possibilities of this important country, and should take steps in order to secure agents at once. The broadcasting authorities anticipate a considerable increase in the number of listeners in 1926. It is extremely likely that the number of listeners

at present paying licences in Sweden will be doubled or trebled during the forthcoming year. All these listeners, as well as the unlicensed ones, will require materials, and although there is no doubt they will buy a certain amount of Swedish gear, there is ample room for British goods also. Sweden is favourably disposed to English goods. The Swedes wish to have the best, and it is for us to supply them with it. At present there is a certain amount of American competition in Sweden, but this is not considerable.

#### **A High-Power Station Sanctioned**

The Swedish Broadcasting Company has already obtained sanction to build a high-power station. This station will be situated in the centre of the country about 50 miles north-west of Stockholm. It will be using some 25 kilowatts, and it is expected to be in commission towards the middle of the present year. This again will increase the great demand for crystal and single-valve sets in all parts of the country. Manufacturers in England should bear in mind the fact that this station will use a fairly long wavelength. At present the one anticipated is expected to be twelve hundred metres, which is the wavelength at present used by the Boden station. The Boden station wavelength will, on the completion of the Swedish "Daventry" station, be reduced to come within the short waveband.

#### **Provision of Capital**

The capital used to float the Radiotjänst Company when it started a year ago was provided to the extent of two-thirds by the Daily Press interests in Sweden, the other third being subscribed by wireless manufacturers. The Swedish Daily Press is very interested in broadcasting, and the full programmes of all the Swedish broadcasting stations are given with greater detail in the daily papers than in the special radio periodicals. In Sweden, radio periodicals have not the same influence as in England. There are comparatively few at present. Radio Press publications are much in demand in Sweden, and can be found on almost every bookstall in the principal Swedish towns.

Whilst journeying on the Swedish State railways I carried my much-travelled seven-valve supersonic heterodyne set, and reception from the British stations and also from the French, even the weaker ones, such as Radio-Toulouse, and from Union Radio-Madrid, was excellent. The set has now travelled 16,000 miles on the various railway systems of Europe in working order. Interference on the Swedish trains has practically been eliminated, and the electrical installation on these trains did not interfere with reception, both at rest and whilst the train was in motion, except in one case.

#### **Conclusion**

Summarising, I would say that the broadcasting service has reached a state of great efficiency in Sweden. It has attained this standard in a very short time. Only a year ago the Radio Broadcasting Company, Radiotjänst, was formed, and to-day we have the spectacle of a country with only six million inhabitants yet possessing five main stations and fifteen relay stations. The country is very much alive and entirely devoted to doing what it can to foster this wonderful new link in international intercourse. No better market could exist than the present Swedish market for British goods, and my strong advice to all British manufacturers is to appoint their agents and to advertise in the Swedish papers accordingly, in order to get some post orders before they have settled their arrangements with their respective agents. The rate of exchange is very favourable indeed for selling purposes, as the krona is worth a little more than one shilling. One receives approximately 18 Swedish krona for a pound.

The Swedish Government welcomes imports, and any manufacturers who are desirous of extending their activities to Sweden can get any further particulars by writing to me. I shall be only too pleased to give them any details which it is in my power to do, and so help them in their endeavour to bring Sweden and England closer together in every way.