

RADIO FOR EVERYBODY

THE DEVELOPMENT OF WORLD'S MAJOR RADIO BROADCASTING SYSTEMS

1. From Morse Messages to Entertainment

1.1 At first, Wireless Live Reporting and News

Wireless messages were entered with a **Morse key** and transmitted with a **spark gap** device. Because of their nature as electromagnetic waves they could have been received by everybody owning a suitable equipment, provided favorable **propagation** conditions. Receivers used a **coherer** which converted signals making them recordable on paper or audible through a buzzer or a telephone set.



Transmission of news was not a problem. In June 1898 **Marconi** took its equipment to Ireland, where sailing races were quite popular, to report live the **Kingstown Regatta** for *The Dublin Express*. Then he accepted an invitation to cover the races of the 1898 **America's Cup** for *The New York Herald*. On his return trip aboard the **SS St Paul** he received the latest news from his English station, distant 66 miles, and published them on *The Transatlantic Times*, a special newspaper for the passengers.



Special cancellation for the 1987 America's Cup in Australia on commemorative automated stamp for this event

1. From Morse Signals to Entertainment	2. So Many Countries, so Many Systems
1.1 At First, Wireless Live Reporting and News	2.1 U.S.A.: Commercial Stations and Networks
1.2 Music and Concerts as a Test	2.2 Great Britain: A State Owned Corporation
This exhibit presents the development of radio broadcasting and its first implementation. Countries presented here not only were the first to put in place regular broadcasting activities but they set up organizational and operational models that were then adopted or adapted in several other countries.	2.3 Germany: Government Takes Control
	2.4 France: Coexistence of Public and Commercial Stations
	2.5 Soviet Union: At the Kremlin's Service

am 3.1. MRZ. 1914	Zeitungs-Dienst des Dampfers Cap Ortegale .	Lfd. Nr. <u> </u>
durch		Abgeliefert an
von Station: Norddeich	Entfernung von der Grossstation 1690 Seemeilen	Tag..... Zeit.....
		Wortzahl.....

London: Asquith, mehrere Minister und Generäle hatten eine längere Konferenz, worauf Asquith sich dem Könige beugte. Später verkündete Asquith im Unterhause den Rücktritt des Kriegsministers General French. Asquith übernimmt das Kriegsministerium. - Im Oberhause gab der Lordpräsident Marley eine Erklärung ab, die als bevorstehender Rücktritt gedeutet wird.

London: Heute beginnt der Streik der Elektriker.

Sankt Petersburg: In den Putilowwerken streiken sämtliche Arbeiter.

The installation of radio equipment on many passenger ships improved their safety and enabled coastal stations to exchange wireless telegrams with them and to send **messages with the latest news**, to be posted on a bulletin board for the benefit of their guests.

First of a two-pages message sent from the coastal station Radio Norddeich to the German steamer *Cap Ortegale*, distant 1690 miles, with the international news of 31 March 1914. Please note, at the corners, the small hole left by the pins used for affixing this message on the ship's bulletin board.

This page present news concerning Government talks in London, strikes in London and St Petersburg, and the visit of Prince Heinrich of Prussia to Brazil and Argentina.

London: Am Sonntag gegen Abend...
 Sankt Petersburg: In den Putilowwerken streiken sämtliche Arbeiter.
 In der Nacht der deutsche Generalkonsul, der Minister des Auswärtigen, der Marineminister, das militärische Hofkapellmeister und der Bürgermeister erschienen. Am Sonntag begrüßte die deutsche Eskadriere das Prinzenpaar. Prinz Heinrich brachte herrliche Blumenarrangements.

1.2 Music and Concerts as a Test

Technical issues prevented transmitting voice and music. The first successful apparatus to overcome them was **Poulsen's** arc (1903) that remained a reference for several years. **Fessenden** built high voltage generators and broadcast a family concert from his station in Massachusetts, U.S.A., on Christmas' eve 1906 .



Fleming's diode on a Marconi receiver



The inventions of the **diode** by **Fleming**, the **triode** by **De Forest** and its modified version by **von Lieben**, and, later, the alternate current tube by **Ted Rogers**, provided, over time, a by far more suitable technology for reaching the target.



In 1910 De Forests transmitted "I pagliacci" with **Caruso** from the Metropolitan Opera House in New York. From the military wireless station on **the Eiffel Tower General Ferrié** carried out several broadcasting tests, including a connection with Arlington, U.S.A., in 1915.

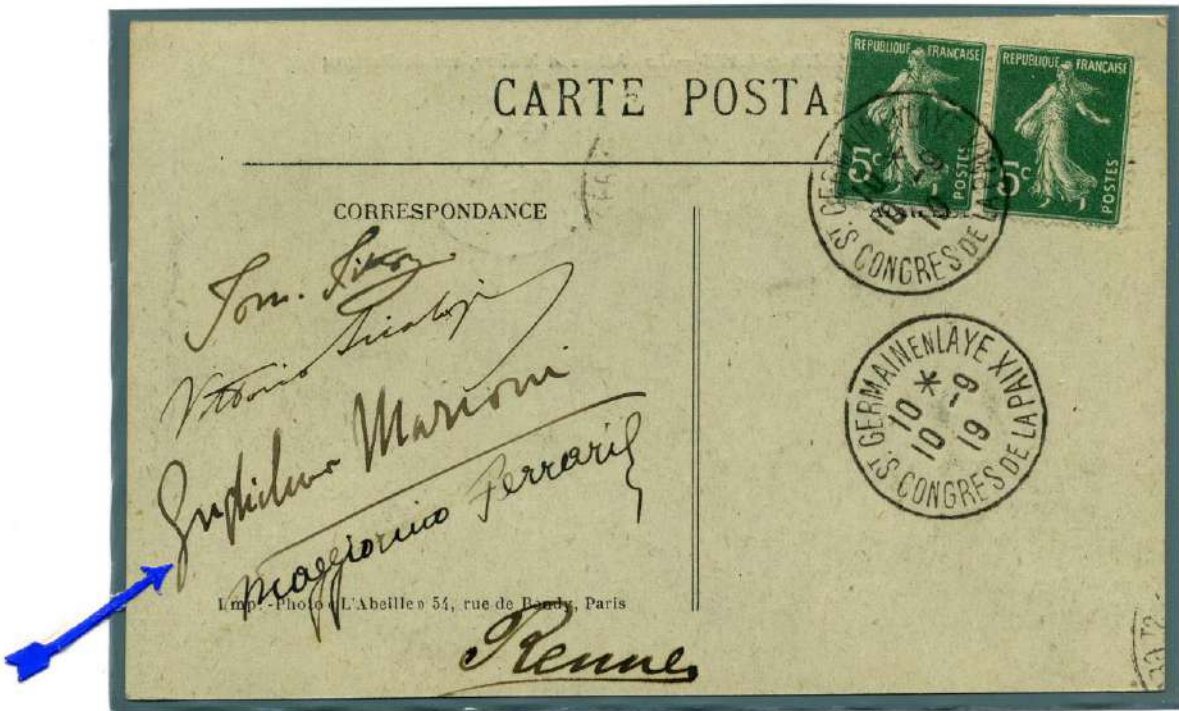


In 1915 **Armstrong** presented the Regenerative circuit that became the reference for building new valve receivers.

In the time frame of the war, the **Relay League (ARRL)** was founded. Private wireless activities were banned during WWI for security reasons and **several amateurs joined the Army** as wireless specialists, improving their knowledge. When the ban was lifted amateurs commenced broadcasting phonograph records over their stations.



Research took off at full speed after the **Peace Congress** of 1919. **Marconi**, a member of the Italian delegation at that Congress, managed the activities of his Company in Chelmsford, setting up a station which started transmitting a daily news program on 23 February 1920.



Postcard with the postmark of the Peace Congress - St Germain en Laye (1919) signed by Marconi and other Italian delegates

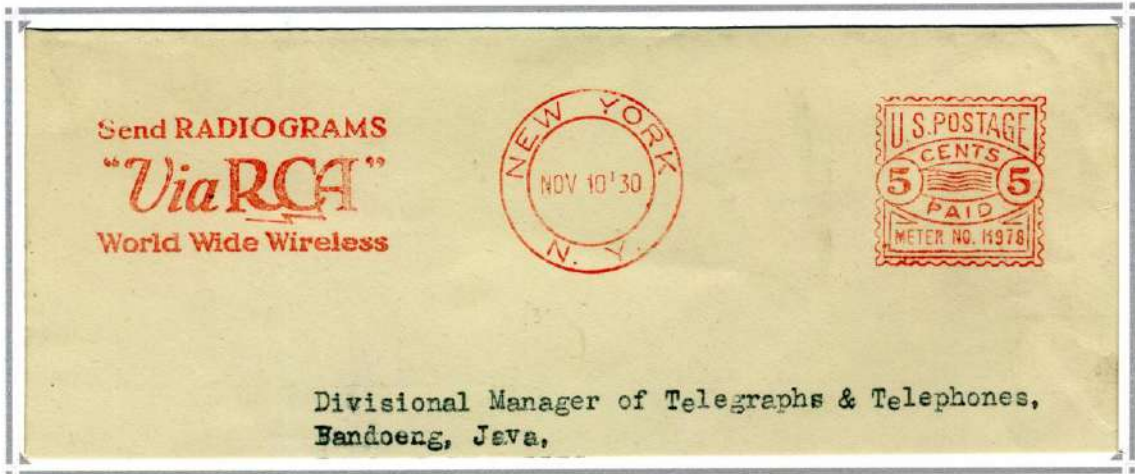
On 3 May 1920 the scientist broadcast greetings and songs from his yacht **Elettra** during a cruise of Portugal. The echo of the Chelmsford programs convinced the *Daily Mail* to sponsor a radio concert of the soprano **Nelly Melba** on 20 June 1920. On 24 August the **first radio transmission in Argentina**: Wagner's **Parsifal** conducted by Félix Weingartner was broadcast from the Coliseo Theater in Buenos Aires.



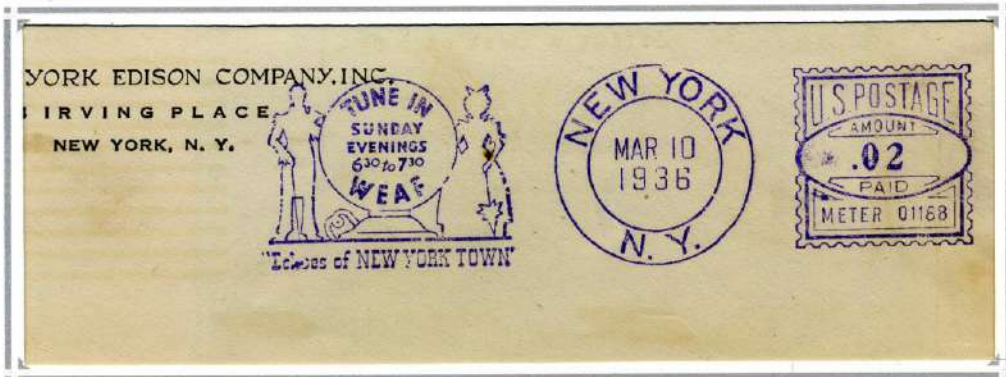
2. So Many Countries, so Many Systems

2.1 U.S.A.: Commercial Stations and Networks

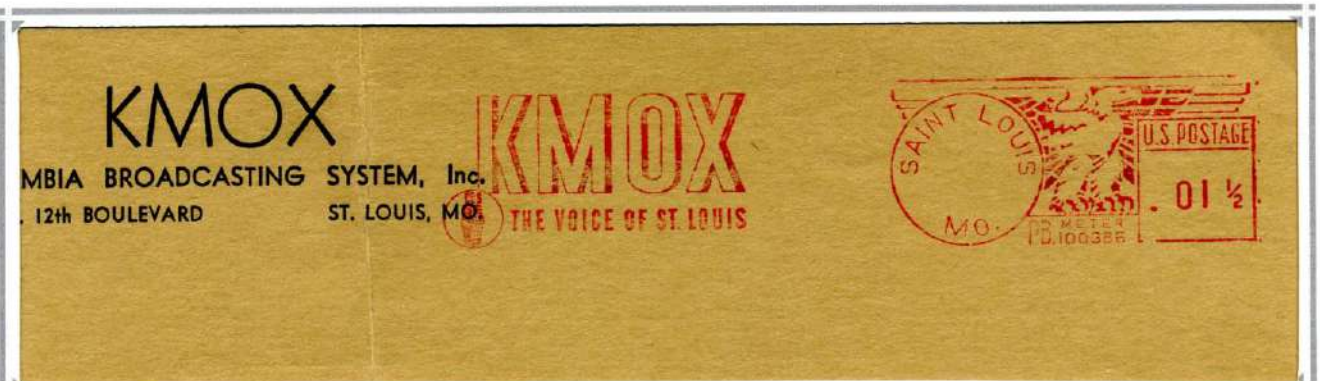
In 1919 the merger of the General Electric Company and the Marconi Company of America gave birth to the **Radio Corporation of America**, which inherited the wireless telegraphy business and had strong patent links with the main electric corporations. RCA chairman, Sarnoff, a previous Marconi's director, was convinced that radio could open up new business areas, such as broadcasting services and consumer receivers. He envisioned a "music box" for providing entertainment to every family.



On 2 November 1920 Frank Konrad, an amateur, began the transmission of music at 8XK in Pittsburg, that evolved into the first commercial station, Westinghouse's **KDKA**. Its broadcast of the results of the presidential elections won by **Harding** raised a tremendous interest. In 1922 AT&T's **WEAF**, based in New York, introduced advertisements in its sending: hundreds of stations were founded because companies were attracted by the advertising value of broadcasting.



The success of these initiatives induced greater investments for setting up more powerful stations, able to reach larger areas. In 1925 **KMOX**, "the voice of Saint Louis", aimed at covering the great Midwest.



Business strategies for training receiver sets easily available. In 1921 David Sarnoff's initiative of broadcasting the boxing match **Dempsey - Charpentier** got 300.000 listeners and in 1922 the first **football** match was transmitted live. That triggered **baseball** live reports, on air almost every day.



Many early radio receivers were home-built using **components** or assembly kits, like this **Model 9** made available by **Atwater Kent**, with an Amplion loudspeaker. Between 1918 and 1922 **Armstrong** invented the Super-regenerative and the Super Heterodyne circuit that improved dramatically performances of receivers. At the end of 1924 1.400 stations were on air, with 3 millions receiver sets.



To keep this proliferation streamlined Secretary of Commerce **Hoover** presented the Radio Act (1927) that authorized station ownership and management by private entities and created the Federal Communications Commission, in charge of defining standards, granting licenses and assigning frequencies.

The Radio Act fostered the creation of networks: the first was the RCA's **National Broadcasting Corporation (NBC)**, followed by the American Broadcasting Corporation (ABC), Columbia Broadcasting System (CBS) and many others.

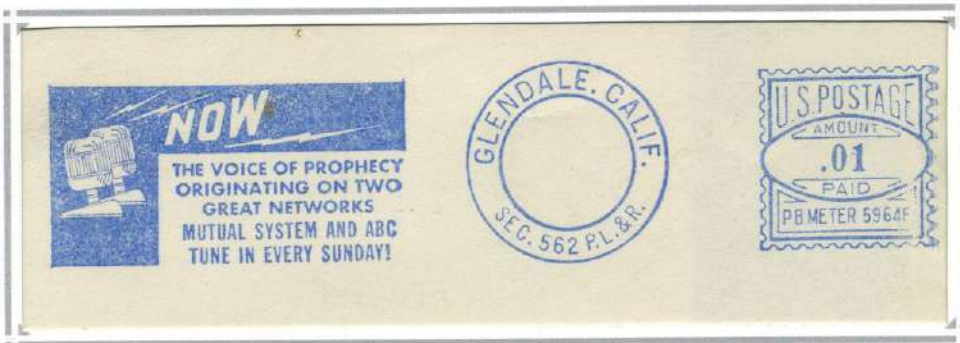


Reply postcard from NBC to a British listener, franked with 1/2 c stamp with "NBC" perforation

Commercial stations were funded through advertisements and program organizations, like Sherwin-Williams's "Auditions of the Air" and "Ford Radio Programs". During prime time one hour cost up to 30,000 \$.



H. M. S. Richards, a Seventh-day Adventist evangelist, pioneered the use of radio to present the Gospel, through "the Voice of Prophecy" (1934). These non commercial stations developed connections to national networks.



The Voice of Prophecy was connected to Mutual System and ABC

American presidents realized soon the significance of radio: **Harding** was the first to deliver a radio message, **Hoover** used it for his election campaign and **F.D. Roosevelt** established it as a direct communication channel with the American people.



There was a growing interest for sport and news features. Some journalists, like **Murrow**, became famous for their reports. In 1934 **Reagan** was a baseball sportscaster for radio stations WOC and WHO. In 1942 the U.S.A. government founded the **Voice of America**, which "speaks to the world for America, for the Government and for the people of the United States".



2.2 Great Britain: A State Owned Corporation

The Marconi Company, founded in 1897, devoted initially its activities to wireless telegraphy. After WWI it developed and built broadcasting stations and consumer receivers: its stations 2MT (in Chelmsford) and 2LO (at the **Marconi House** in London) were the first on air and captured the attention of the public.



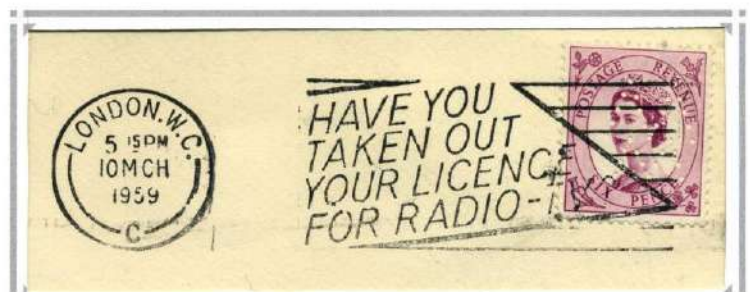
Marconigram cover from London to Berlin forwarded by Air Mail (1930). This stationery was going to be replaced soon, after the 1928 Imperial Telegraph Bill that merged Marconi's service with those of the Post Office and of the Associated Cable Companies.



In 1922 the **British Broadcasting Company** was founded, its shareholders being the British Government and six radio companies. In 1927 it became a State Corporation with the mission of producing information, entertainment and cultural programs aiming at integrity and quality.



BBC prestige increased under the guidance of its chairman **Lord Reith**. In 1932 BBC opened the *Empire Service*, the forerunner of the *World Service*, hosted at **Bush House**. It used a **relay station at Ascension**. On Christmas Day 1932, **George V** gave the first royal broadcast to the Empire. BBC revenue derived from a tax on receivers and a **yearly license fee** paid by listeners.



listeners in many countries: during WWII an ample coverage was ensured by BBC War Correspondents scattered on the Front.



Detail from the back



Cover from J. H. Gilman, member of the BBC Transmitter Staff on the Western Front, marked with the words "On active service", stamped with "Postage Paid" upon arrival in Great Britain and passed by the Censor.



2.3 Germany: Government Takes Control

On October 1923 the first regular radio transmission was broadcast from the **Vox-Haus** in Berlin by the newly created **Deutsche Rundfunk**, sustained by the radio industry and led by **Bredow**, a Telefunken scientist appointed Undersecretary for Telecommunications in the **Reichspost** (Ministry of Post)..



Vox-Haus
(left)

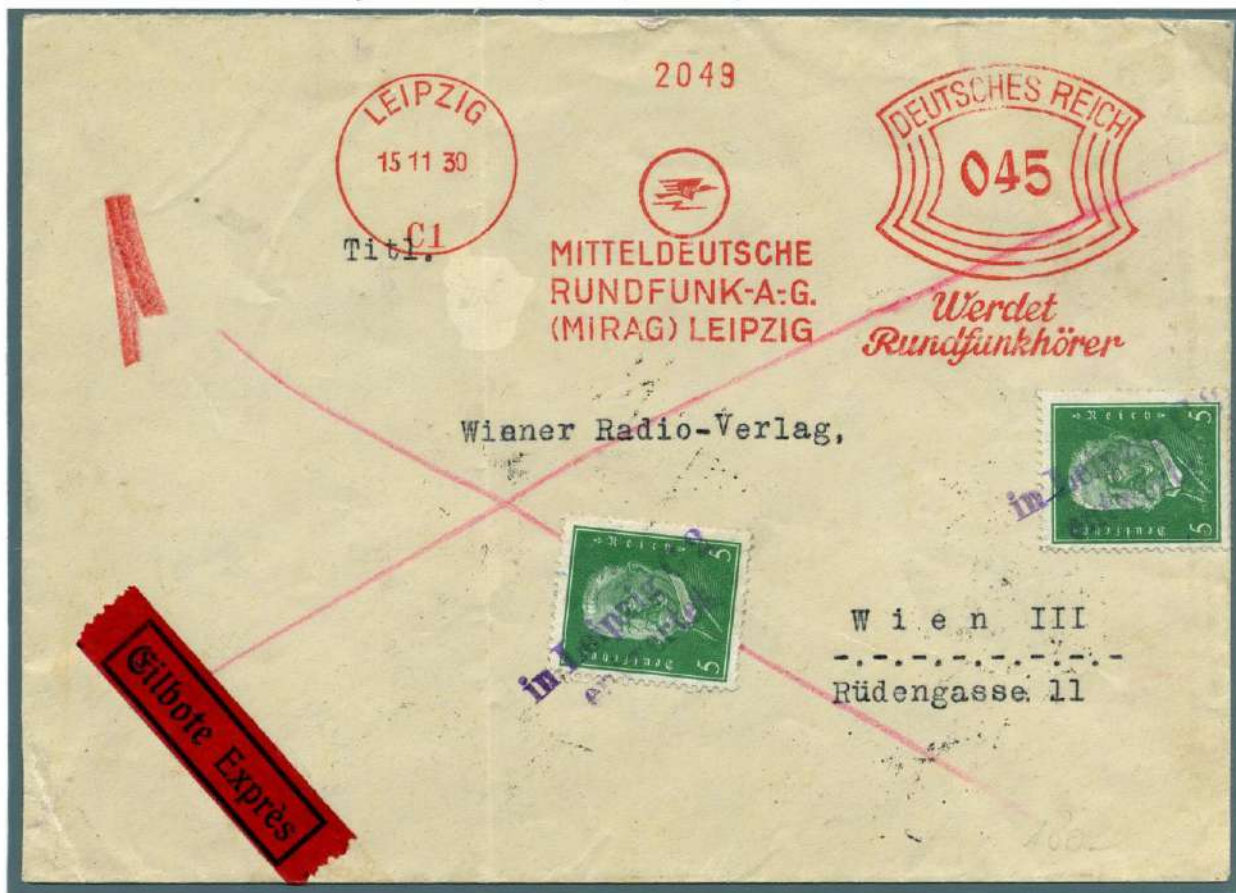
Loewe GO 333
"Millionaire"
Receiver Set
(20 pf)

Hans Bredow
& Reisz
Microphone
(30 pf)

Reichspost
HQ
(right)

Freimachungswert 1,60 DM + 0,20 DM Förderungszuschlag
zum Ausbau der rundfunkhistorischen Abteilung des Berliner Post- und Fernmeldemuseums

The Reichspost supported the creation of nine regional companies, backed by the industry and by regional governments. **MIRAG** started operations in Leipzig on the occasion of the 1924 Spring Fair that hosted the very first radio trade show in Germany, with 200 companies presenting their products.



Express letter from Leipzig to Vienna (15.11.30), with franking cancellation of the Mitteldeutsche Rundfunk A.G., Leipzig + 2 x 5 pf stamps to complement the Express rate to Austria

In December 1924 180.000 visitors attended the first **International Radio Exhibition (IFA)** in Berlin. Loewe introduced a receiver (**OE 333**) that sold more than one million sets. An antenna, the **Funkturm** (150 m) was then built on the exhibition ground and became Berlin's landmark.

Loewe OE 333
"Millionaire"



The Reichspost had in place **advertising campaigns** for gaining listeners, who paid a monthly license fee. In the occupied territories in Poland it was paid using **Radio fiscal stamps**, issued in 1940.



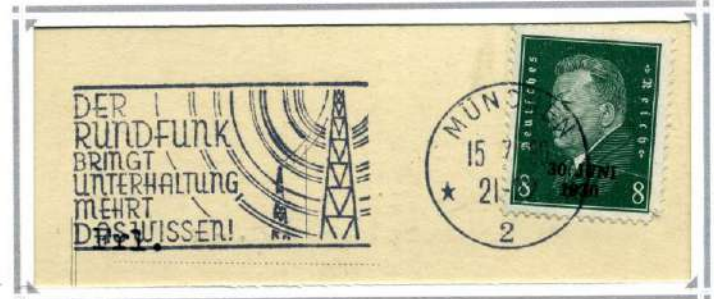
In 1926 the Reichs-Rundfunk-Gesellschaft (RRG) took over the postal telegraph (PTT) and appointed **Bredow** as chairman. Transmitters were installed next to the most populated areas.



Transmitter in Langenberg, near Düsseldorf (1927)



The first programs had a strong cultural emphasis and included great classic music, operas, cultural features and light entertainment. Actress **Anna Fühling** ("Germania") read tales and tenor **Joseph Schmidt** sang 37 operas between 1929 and 1933.



"Radio brings Entertainment/increases Knowledge"

News and live reporting grew. Emphasis was on sport competitions, but also on special events, including test flights of new aircrafts. In 1929 the **Süddeutsche Rundfunk** had the first live broadcast onboard of the **DO-X**.



Postcard with red and black cancellations for the *Südfunk* broadcast onboard the DO-X test flight, Friedrichshaven 17.11.1929

A number of receivers sold several hundred thousands units. D-Zug
funken sets.



The "D-Zug"



"Millions of people listen to radio with Telefunken. You too?"

Bredow resigned as soon **Hitler** took power; being replaced by **Joseph Goebbels**, Minister for People Information and Propaganda. In March 1933 he announced a purge (*Säuberung*) at RRG. For keeping a tight political control the "**Reichsrundfunkkammer**" was established.



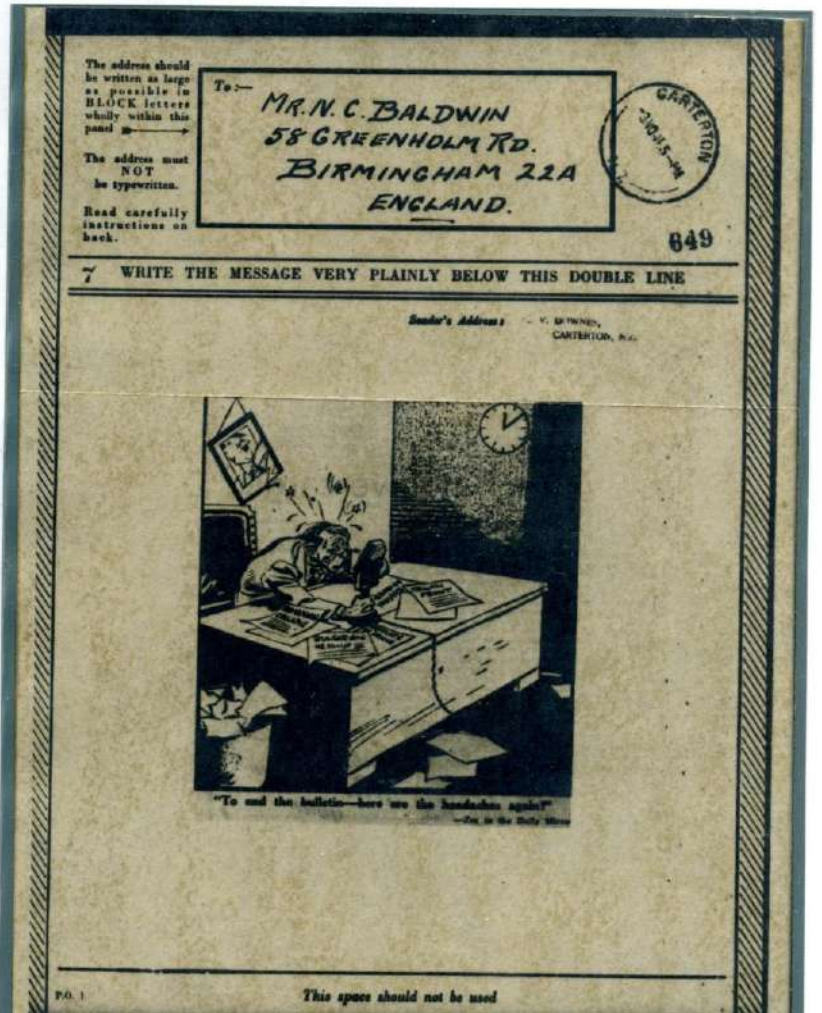
Technical facilities were enhanced; among them was the station used by the RRG International Service, installed in **Zeesen** near Berlin since 1929. The Postal Security Force protected it night and day.



The **Olympic Games in Berlin** (1936) were the showcase for the German technology: 20 transmitting vans were put at the disposal of the foreign media along with 300 microphones. Radio broadcasts at the Olympics were given in 28 different languages.



Airgraph from New Zealand to Birmingham (1945) with cartoon showing Goebbels while controlling Nazi propaganda.



2.4 France: Coexistence of Public and Commercial Stations

Since the first trials of **Ducretet** the **Tour Eiffel** (300 m high) was considered an ideal place for radio communications and this new role saved it from being dismantled. General Ferrié used it for military wireless activities and later as a broadcasting station, building an **antenna** parallel to the Seine. In 1921 this station became **Radio-Tour Eiffel**, owned by the State and run by CSF. Its programs interested the public and their success accelerated the birth of other stations.

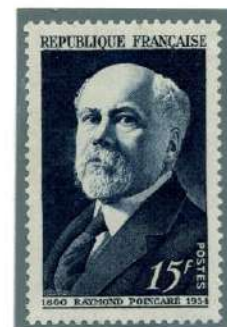


The first commercial station, **Radiola** (later **Radio-Paris**), broadcast its first programs in November 1922 and hosted several guests, including **Maurice Chevalier** and **Pablo Picasso**. Commercial stations were funded through advertising. In 1923 a State owned station (**Paris PTT**) was installed at the High Institute of the Post.



Cancellation referring to the 50th anniversary of Radio in France thanks to **Paris PTT**

Paris PTT launched the **Radio Journal**, created by **Maurice Bourdet** and his editorial staff. **Poincaré's** government accepted the coexistence of public and private stations and set regulations for authorizing new commercial stations. Radio receivers, especially when combined with record players and fidelity loudspeakers, became an **entertainment machine** for family and friends.



Stamps booklet (50 c. Jeanne d'Arc)

The main stations had theatrical plays, concerts, lectures, news as their top features. Sport reports became very popular: in 1929 *Paris PTT* broadcast live from the **Tour de France**. Since 1928 **Pastor Boegner's** Lent sermons had a large audience. Regional stations, like **Radio-Maine**, took the same approach.



Stamps booklet (50 c. Jeanne d'Arc)

In 1931 **Radio Luxembourg** opened a "peripheral" studio in Paris. In 1933 a law banished advertisements from public stations and established a **licensee fee** on radio sets. In the years 1935-1937 a **radio fiscal stamp** was issued yearly for this purpose.



Programs of **Radio Cité**, a Parisian commercial station launched in 1934, had **André Segovia**, **Edith Piaf** and **Pablo Casals** as regular guests.

2.5 Soviet Union: At the Kremlin's Service

Lenin was fully aware of the strategic importance of radio and founded the **Radio Laboratory at Nishni-Novgorod** for catching up with the technology achievements of the major powers. Research was led by **Lebedinski** and by **Bonch-Bruевич**, who designed the first thermionic valve of the USSR.



The Kremlin's messages to the various Republics were broadcast by the **cow** at Stchelkovo and went also to their Press for publication; and in 1929 the **international service** became operational.. A regular **Radio Journal** started in 1924. Ten years later in Moscow and other big towns radio transmissions were also spread via a very large **audio network linking loudspeakers** installed in public buildings and factories.



In few years all main territories had own radio stations so that their inhabitants were kept up-to-date on the Government's activities; among them were **Cecenians**, **Jacutians** and **Samoieds**. Listeners paid a **license fee** on receivers, that was managed by the Central Committee for Communications.



License fees were paid with "Form 3", a double card of which one half, cancelled by the post office, was for the owner of the set.

Цена 12 р. СССР Форма № 3
 НАРОДНЫЙ КОМИССАРИАТ СВЯЗИ

УДОСТОВЕРЕНИЕ
 на ламповый приемник индивидуального пользования (на переменном токе)

Фамилия Мартин
 Имя, отчество Н. Н.
 Социальное положение Служащий
 Адрес Б. Стасова, д. 10 кв. 3
(город, улица, № дома и кв. или село, сельсовет, район)
 Действительно на первое полугодие 1933 г.
 Выдано 16 / III 1933 г.

ХРАНИТСЯ ПРИ РАДИОУСТАНОВКЕ

И. П.

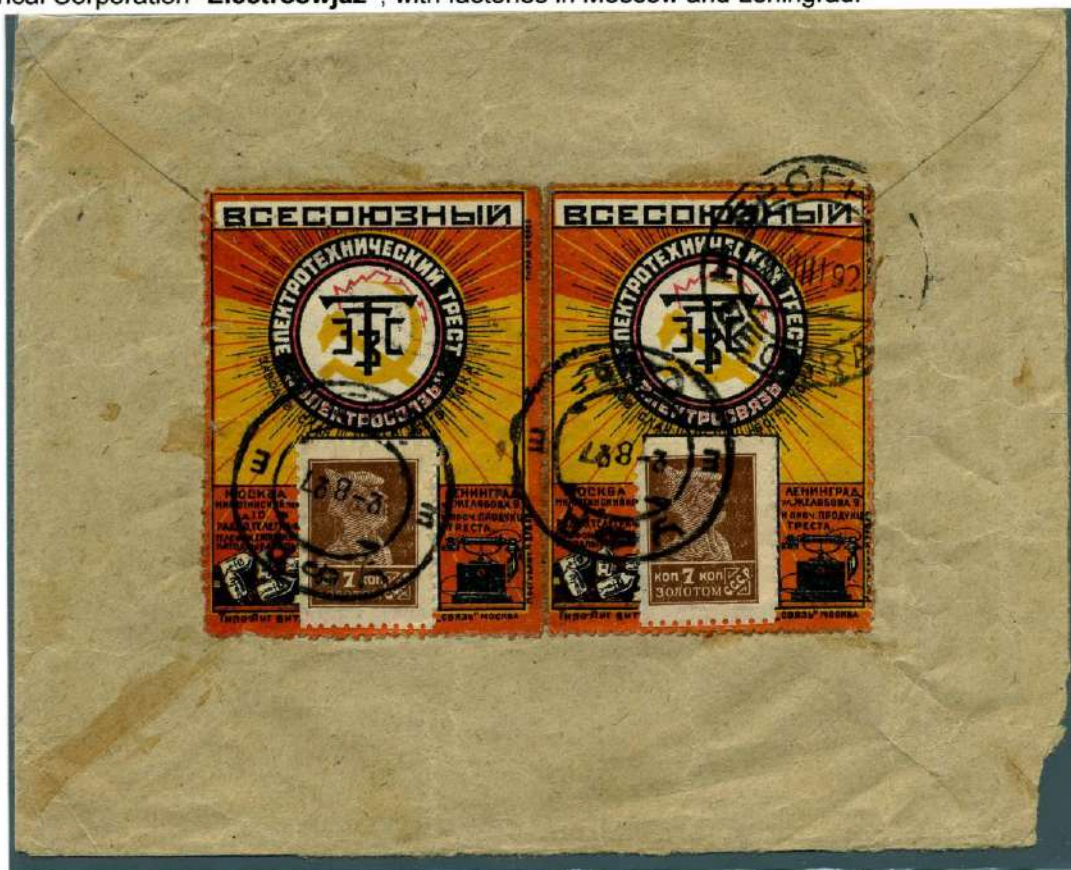
The card had the imprint of the 10 k. stamp (1929 definitive issue), the same of postal cards, as in the following item on next page).

Radio programs aimed at spreading the culture of entertaining people. Music of **Tchaikovsky** and other great composers was broadcast for hours every day. Special programs supported **fitness training of workers** at the factories.



Postal card (1931) advertising fitness training for woman workers, showing a spinning mill

Production of receiver sets, valves and other devices was assigned to State owned companies, like the All Union Electrical Corporation "**Electroswjaz**", with factories in Moscow and Leningrad.



Letter to Belgrade (2.8.27) with stamps inserted in larger label advertising the products of "Electroswjaz". These stamps with labels were sold at the Post counters. Senders affixed them on the back of covers to protect their content against censorship.