

THE FIRST HALF CENTURY (1894 - 1945)

Milestones in radio

By Jacques MARZAC

1894

In November 1894, in the basement of the Faculty of Science of Bordeaux, France, with a Hertz resonator equipped with a telephone, Albert Turpain sent and received his first radio signal, using Morse code transmitting distance up to the 25 meters, through four walls 50 cm thick.

French scientist Albert Turpain (1867 - 1952).



By Bernard BLIN

1895

► Aleksandr S. Popov (Russia) invents the lightning-recording antenna. On 7 May he presents the first receiver of electromagnetic waves to the St. Petersburg Physical and Chemical Society.

► Near Bologna (Italy) Guglielmo Marconi carries out the first experimental transmission of wireless signals over a distance of 400, then 2,000 metres.

► Popov makes transmissions covering 50 km. from the shore to Russian ships.

1900

► Marconi obtains a patent for a process enabling an operator to select a wavelength. (The first receivers picked up all frequencies at the same time.) February: The first commercial wireless station is set up, on the island of Borkum (Germany).

1901

► 12 December: Marconi makes the first transatlantic wireless transmission, using Morse code, between Poldhu in Cornwall (U.K.) and St. John's, Newfoundland.



◀ The Russian engineer Aleksandr Stepanovich Popov (1859-1906).

© Novosti, Paris

In December 1901 Guglielmo Marconi received the first trans-Atlantic radio signal. Below, Marconi at St. John's, Newfoundland, with the receiving apparatus he used.

Marconi's assistants attach the receiving antenna to a kite (bottom photo). Marconi is at far left.

1896

► 2 June: In England, Marconi files a patent for a system of wireless communication, and later transmits and receives Morse code signals over a 3 km distance.

1897

► Eugène Ducretet (France) experiments with wireless telegraphy.
► Marconi founds the Wireless Telegraph and Signal Company, Ltd., in London.
► Karl Ferdinand Braun (Germany) invents a device which completes "the tuned circuit", matching the wavelength of transmitter and receiver, a procedure discovered by Sir Oliver Lodge (U.K.).

1898

► 5 November: Ducretet describes to the French Academy of Sciences transmissions between the Eiffel Tower and the Pantheon in Paris (4 km).

1899

► A 42-km link is established in France between two cruisers equipped with Ducretet-Popov devices.
► 28 March: Marconi makes a wireless transmission across the English Channel from Dover to Wimereux.

1903

► In Germany Siemens and Allgemeine Elektrizitäts Gesellschaft create a joint affiliate, Telefunken.
► Valdemar Poulsen (Denmark) invents a means of producing continuous waves by "arc transmission", later used to construct high-frequency alternators for sending continuous radio waves.
► Gustave Ferrié sets up a long-distance telegraph station on the Eiffel Tower.
► The London *Times* and the *New York Times* receive information about the Russo-Japanese war via radio.

1904

► First experiments with telegraphic radio links in Spain.
► In France a commercial maritime radio network is set up under the control of the Ministry of Posts and Telegraphs.
► 16 November: John Fleming (U.K.) invents the thermionic two-electrode valve, or diode, making possible sound transmission.
► A radiotelegraph station is



© Dite/Usis, Paris



© L'illustration/Sigma, Paris

built on the Adriatic coast in the principality of Montenegro.

1905

- ▶ In Canada, the Wireless Telegraph Act stipulates that a licence must be obtained for wireless telegraphy.
- ▶ First wireless communication in Spain, between El Ferrol del Caudillo and La Coruña.
- ▶ Discovery of the properties of galena (lead sulphide) as a detector of radio-electric signals.

1906

- ▶ Reginald Fessenden (U.S.A.) constructs a high-frequency alternator and succeeds in transmitting the human voice via radio.
- ▶ 25 October: Lee de Forest (U.S.A.) applies for a patent on the triode, a 3-electrode valve that makes possible the detection, transmission and amplification of radio signals.

1908

- ▶ 2 April: De Forest experiments with his triode in France by broadcasting from the Eiffel Tower.

1910

- ▶ 13 January: A broadcast from the Metropolitan Opera House in New York featuring Enrico Caruso is arranged by Lee de Forest and is heard 20 km away on a ship at sea.

1912

- ▶ 15 April: Radio amateurs pick up the SOS sent out by the *Titanic*.

1913

- ▶ Amateurs with galena-crystal radios listen in to the first regular weekly musical programmes broadcast from a wing of the Château de Laeken (Belgium).
- ▶ A federation of radio clubs, the Wireless Society of London (later the Radio Society of Great Britain) is founded in London.

1914

- ▶ March to August: a weekly concert is broadcast from the Château de Laeken (Belgium).

1915

- ▶ First international broadcasts, from Germany, of daily news reports.
- ▶ 25 October: The American Navy station in Arlington, Virginia

(U.S.A.) establishes a link with the Eiffel Tower in Paris.

1917

- ▶ The Bolsheviks use radio to influence the Germans during negotiations for the Treaty of Brest-Litovsk.
- ▶ 8 November: A decree on the press establishes censorship that will last for 72 years in Russia.

1919

- ▶ 17 October: The Radio Corporation of America (RCA) is founded, absorbing the American subsidiary of the Marconi Company and amalgamating General Electric, Western Electric, AT&T (American Telephone and Telegraph) and Westinghouse.
- ▶ 16 November: In Germany Hans Bredow organizes political and economic news broadcasts for the press and industry.
- ▶ Many American radio amateurs receive on their crystal sets regular broadcasts from Pittsburgh (U.S.A.) by Frank Conrad. On Wednesday and Saturday evenings the station plays records chosen by the listeners. This marks the appearance of broadcasting as opposed to wireless telephony, where a connection is made from one point to another, between two correspondents.

1920

- ▶ Broadcasting on a regular daily basis was born in the United States.
- ▶ The first demonstrations of radio broadcasting in Australia.
- ▶ The appearance in France of battery-powered receivers with valves and headphones.
- ▶ The Amsterdam stock market (Netherlands) broadcasts stock prices and financial news.
- ▶ 23 February: The Marconi Company organizes a radio-telephone concert (featuring Dame Nellie Melba) that is broadcast from Chelmsford (U.K.) and heard in France, Norway, Italy, Persia and by ships at sea. The British Postmaster General protests against the "frivolous" use of a public service and suspends broadcasts in November.
- ▶ Autumn: Soviet international broadcasts begin.
- ▶ 2 November: The Westinghouse station KDKA in Pittsburgh announces the victory of Warren G. Harding over James Cox in the American presidential election.



© L. Illustration/Sigma, Paris

▲ A recital by the Italian tenor Enrico Caruso was broadcast from New York in 1910.



© Jean-Loup Charnet, Paris

◀ In 1903 radiotelegraphy equipment was installed on the Eiffel Tower in Paris. For many years the Tower's transmitter was one of the most powerful in the world.

▼ American farmers with a radio receiver on their way to a dance (1924).



© Boyer-Vollet, Paris

► The first radiotelegraph (Maracay) service begins in Venezuela.

1921

- 2 January: KDKA broadcasts the first religious programme, "Church of the Air".
- In France Gustave Ferrié makes the first radio broadcasts from the official "Paris PTT" transmitter on the Eiffel Tower.
- 9 May: A play is broadcast for the first time on the air, direct from the Davis Theatre in the U.S.A.
- 2 July: An RCA station broadcasts the world heavyweight championship fight between Georges Carpentier and Jack Dempsey from Hoboken, New Jersey (U.S.A.).
- August: Radiokomintern is launched in the U.S.S.R.

1922

- Regular public broadcasting (news and music) begins to spread in many countries, including Argentina, Denmark, Canada, the U.S.S.R. and the United Kingdom.
- The Canadian government imposes a one-dollar tax on radio receivers.
- Publication of Spain's first magazine devoted to radio, *Radio-Sport*, coincides with the inauguration of the country's first transmitters.
- In France a wireless industry employers' federation and an International Wireless Committee are formed to examine legal, economic and administrative issues connected with wireless.
- Rules for the control of wireless telegraphy in time of war are adopted at The Hague (Netherlands).
- 16 August: AT&T launches station WEAJ in New York (U.S.A.), the first station funded by advertising.
- 17 September: The first programmes are broadcast from Moscow to all Soviet radio stations.
- October: The BBC (British Broadcasting Company) is formed. 6 big companies own 60% of the capital, the rest being divided among 200 private companies.
- Marconi demonstrates the range of short waves.
- There are 700 licenced radio stations in the U.S.A.
- The first Chinese radio station starts up in Shanghai.

► Radio broadcasting starts in Cuba.

1923

- The first regular broadcasts in Germany, Belgium, Finland, Norway, Switzerland, Czechoslovakia and Australia.
- 8 February: In Italy radio is nationalized by royal decree and placed under the authority of the Ministries of Posts, of the Army, and the Navy.
- Colombia sets up a Ministry of Posts and Telegraph and an international radiocommunication station.
- 30 June: A French law extends the principle of state monopoly on telegraphic transmissions to the broadcasting and receiving of radioelectric signals.
- A private Radio Club is founded in Madras (India).
- Japan's minister of communications regulates radio broadcasting by decree and bans radio advertising.
- The first experiments are carried out by the Ceylon (now Sri Lanka) Telegraph Service. First broadcasts in Prague (Czechoslovakia).
- First broadcasts by the Finnish Radio Society from Helsinki.
- The federal Mexican government authorizes the first commercial radio station.

1924

- 27 April: The Unione Radiofonica Italiana (URI, a jointly-owned company with a majority participation by the state) is set up in Italy.
- October: Radio broadcasting begins in Austria with the founding of the RAVAG, a semi-public body that takes over from the Viennese Radio-Hekophon experimental station, inaugurated in 1923.
- Regular broadcasting begins in Sweden. It is funded by licence fees, carries no advertising and has an educational mission. Radioj anst (Sverige Radio) is granted exclusive rights.
- In France Paris-PTT broadcasts debates at the League of Nations.
- 14 December: URI obtains exclusive rights to broadcast in Italy.
- A long-wave station is founded in Mexico and a state-run educational station is opened.
- The Philips Company launches the Hilversum (Netherlands) station. Programmes are managed by a listeners' association.

- Experimental broadcasts in Ceylon.
- In the U.K. the BBC broadcasts its first programmes for schools and young people.
- Radio Moscow transmits on a regular basis. Its programmes are produced by *Radiopredacha*, a joint body associating the unions and the People's Commissariat for National Education.
- KDKA broadcasts on short wave to South Africa.

1925

- Radio broadcasting starts in Hungary, Latvia, Poland, Romania and Mexico.
- The Union internationale des radio-amateurs (International Union of Radio Amateurs) is formed in Paris.
- 25 March: Independent companies funded by private capital open the first Japanese radio stations in Tokyo, Osaka and Nagoya.
- 3 April: The International Broadcasting Union (UIR) is formed in Geneva under the auspices of the League of Nations.
- Association Radio-Luxembourg is established with a 50-watt transmitter in the Grand Duchy.
- 20 June: The first Peruvian radio station (OAX) is founded.
- August: Polskie Radio is created in Warsaw (Poland) as a limited liability company (40% of the shares are state-owned).
- The first regular radio service in a British colony opens in Ceylon.
- The United Kingdom's most powerful transmitter is opened at Daventry. It covers 85% of the population and transmits on long

Wireless being used in central Africa (1924).



wave the BBC's first regular broadcasts to North America.

- Venezuela's first radio broadcasting service, AYRE, starts up.

1926

- Radio broadcasting starts in Estonia, Iceland, Lithuania and Yugoslavia.
- A radio station is established in Beijing (China). The Indian Broadcasting Company (an affiliate of British Marconi) is authorized to open radio stations in India.
- A radio broadcasting monopoly is set up in Japan with the establishment of NHK (Nippon Hoso Kyokai), a public utility incorporating the existing Tokyo, Osaka and Nagoya stations.
- Following a resolution from the UIR and seeking to avoid or settle differences between radio broadcasting bodies, the League of Nations examines the dangers of international radio for world peace.
- 3 to 12 May: In Britain the general strike hits the press, and the BBC becomes the only source of news and public information.
- In the U.S.A. RCA sets up the NBC (National Broadcasting Company) network, based on two existing networks.
- Radio Zagreb is opened in Yugoslavia.

1927

- 1 January: The British Broadcasting Company becomes the British Broadcasting Corporation, established by Royal Charter, and is granted the broadcasting monopoly by licence for an initial 10-year period. It becomes a public service funded by a licence fee and managed by an independent Board of Governors.



◀ Reporters use a walkie-talkie radio during floods in Louisville (U.S.A.) in 1927.



▲ British archaeologist Walter Emery broadcasts to America from the burial chamber of the great pyramid of Cheops (Egypt, 1930).

► 23 February: In the U.S.A. the Radio Act grants radio protection under the First Amendment to the Constitution (on free speech) and sets up the Federal Radio Commission (FRC). From now on a licence is required in order to broadcast.

► The Austrian, Czech, German and Polish radio networks use telephone circuits to exchange symphony concerts.

► The Japanese colonial authorities set up a radio station in Seoul (Korea).

► The Indian Broadcasting Company Ltd. opens in Bombay and Calcutta.

► Eindhoven (Netherlands) transmits the first radio broadcasts to the East and West Indies.

► The BBC starts educational broadcasting.

► 11 November: The BBC starts broadcasting on short wave from Chelmsford.

► The Columbia Broadcasting System (CBS) is established in the U.S.A.

1928

► The Kuomintang sets up the central Chinese broadcasting station at Nankin.

1929

► The Zeesen station relays German national programmes to Germans overseas.

► The first short-wave broadcasts in Kenya and in Tanganyika (now the United Republic of Tanzania).

► 11 February: The Lateran Agreement between the Holy See and Mussolini's Italy provides for the establishment of a radio station in Vatican City. Radio Vatican is organized by Marconi and inaugurated in 1931.

► April: Representatives of 27 countries attend an international conference in Prague (Czechoslovakia) and reach a long-term agreement on the allocation of radio-electric frequencies in Europe.

► October: Radio Moscow International starts short-wave broadcasts in German, French and English, in compliance with its missions under the first 5-Year Plan.

1930

► Colombia's first radio station, "Voz de Bogotá", starts to broadcast.

► Danish national programmes are relayed on short wave.

► 7 October: The first Spanish radio news programme, "La Palabra" goes on the air.

► In France, the radio station at Agen warns of the sudden flooding of the Garonne before being swept away by the floodwaters.

► Station 1 BC in Caracas (Venezuela) starts regular broadcasting.

1931

► In Sydney and Melbourne (Australia), Amalgamated Wireless launches "The Voice of Australia", the first regular world

Radio Moscow headquarters (around 1930). ▶



▲ A studio at the Tokyo radio station (Japan), around 1930.



broadcasting service in the southern hemisphere.

► A schools broadcasting service is launched in Ceylon.

► From Ecuador, station HCJB (Heralding Christ Jesus' Blessings) broadcasts religious programmes in 11 languages under the auspices of the World Radio Missionary Fellowship.

► Japanese radio comes under state control and censorship becomes more stringent.

► 29 April: A Madagascar station broadcasts music and information in French and Malagasy for two hours a day.

► A short-wave transmitter makes occasional broadcasts in Thailand.

1932

► The International Telecommunication Union (ITU) succeeds the International Telegraph Union, founded in 1865.

► Radio plays a leading role in the U.S. presidential election campaign (Hoover vs Roosevelt).

1933

► 13 March: A Ministry of Popular Education and Propaganda is established in Germany to control the press, cinema, theatre and radio broadcasting. The RRG (Reichsrundfunk Gesellschaft), set up in May 1925, becomes a state body.

► The Ente Radio Rurale broadcasts “educational” programmes to Italian rural areas in support of a campaign to increase farm output.

► May-June: The broadcasting countries (members of the UIR) attend a conference in Lucerne (Switzerland) to negotiate an agreement on the distribution of wavelengths.

1934

► 1 January: A law regulating radio broadcasting in India comes into force.

► The South American Radio Broadcasting Union (SARBU) is formed.

► 12 February: Austrian Radio (RAVAG) broadcasts official information and practical advice during riots in Vienna.

► In Austria, the Dollfuss government organizes the jamming of Nazi propaganda broadcasts from Germany.

► The first Mongolian radio station is set up at Ulan Bator, serving 1,700 receivers.

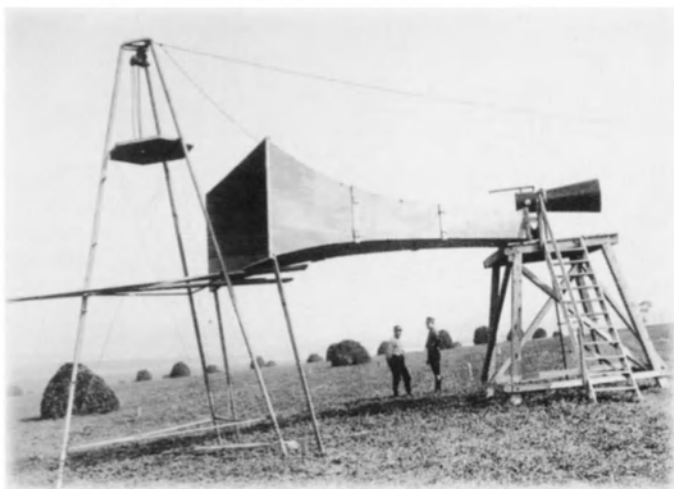
► The Radio Club of Lisbon (Portugal) broadcasts to Brazil, North America and the Portuguese colonies.

► 19 June: In the United States, the Federal Communications Act sets up a Federal Communications Commission (FCC) to regulate transmission and reception of all communications, internal and external, to grant licences and allocate frequencies. There is no censorship, but indecency, vulgarity, false or deceptive signals, etc. are forbidden.

► Radio Vatican starts broadcasting religious services and liturgical and spiritual commentaries.

1935

► Meeting in Brussels (Belgium), jurists of the International Wireless Committee propose a “code of good conduct”



◀ An outdoor loudspeaker built to broadcast Hitler's speeches (1933).

for international radio broadcasting.

► China starts broadcasting to other countries.

Radio broadcasting begins in the Gold Coast (now Ghana).

Italian radio starts to broadcast in Arabic (anti-British propaganda) and jams broadcasts from Ethiopian radio.

► 1 June: Japan starts broadcasting programmes to the west coast of the Americas, Hawaii and the Pacific, in order to defend its foreign policy after leaving the League of Nations.

► 10 August: A radio-communications agreement between Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay sets up technical co-operation and bans broadcasts detrimental to good international relations.

1936

► Number of radio receivers per 1,000 population:

Algeria: 7
Australia: 131
United States: 189
France: 62
Hungary: 40
Italy: 15
Kenya: 77
New Zealand: 146
Poland: 20
Romania: 8
Czechoslovakia: 63
U.S.S.R. 22

► A new radio centre broadcasting on short wave is set up at Zeesen (Germany) on the occasion of the Berlin Olympic Games.

► April: A Radio-Club station is set up in Congo Brazzaville.

► 11 July: In Spain a Falangist group seizes the Union-Radio station in Valencia and announces that revolution is imminent. There is widespread

fighting for control of Spain's radio stations.

► 23 September: The International Convention on the use of Broadcasting in the Cause of Peace is signed at Geneva (Switzerland).

► Hong Kong starts short-wave broadcasting to China and Europe.

► The BBC's first big scoop: a report on the fire at the Crystal Palace (London), with on-the-spot commentary and background noise.

1937

► Number of receivers per thousand population
Germany: 122
France: 76
Netherlands: 118
Canada: 122

► 5 January: A radio transmitter is inaugurated at the Albert I college, Kinshasa (Zaire) on the initiative of the Jesuits. It later becomes “Radio-Leo”.

► Radio supports—within Japan and externally—Japan's military campaign against China. A ban is imposed on listening to foreign radio programmes.

► The United Kingdom has 10 radio transmitters and over 8 million receivers.

► The United States adopts a



A mobile transmitter in France (c. 1935).

“Radio Code”: information is a social duty and should be in the public interest. Radio should provide entertainment, education and information that is not subject to censorship and serves objective truth.

► October: Roosevelt gives a radio talk against the rise of fascism, terror and international lawlessness.

► U.S. commercial radio advertising receipts total \$70 million.

1938

► A law sets up military censorship in Spain.

► There are 650 transmitters and 26 million receivers in the U.S.A.

► 30 October: Orson Welles's programme based on H.G. Wells's *War of the Worlds* is broadcast on CBS and sows panic among thousands of listeners.

1939

► Germany transmits external broadcasts in 26 languages.

► September: The German government makes listening to foreign radio broadcasts a capital offence.

► The French Ministry of Posts, Telegraphs and Telephones establishes Radio Dakar in Senegal.



◀ Arms upraised, Orson Welles directs a rehearsal of a radio programme in 1938. His broadcast on 30 October of an adaptation of H.G. Wells's *War of the Worlds* sowed panic among listeners who thought the country was being invaded by Martians.



◀ Algerians listen to the radio in a café (1939).



▲ A BBC mobile recording unit during the Second World War.



◀ Radio operators of the French Resistance (around 1943).

1940

- ▶ German radio broadcasts a single national programme.
- ▶ 24 April: The first Iranian radio station, supervised by the Ministry of Posts, Telegraphs and Telephones, is inaugurated.
- ▶ 15 May: Belgian radio destroys its facilities in Brussels and moves to France, where it broadcasts from Lille and later from Montpellier.
- ▶ 18 June: Broadcasting from London on the BBC, General de Gaulle calls on the French people to resist.
- ▶ 27 July: In occupied Belgium, a decree makes listening to British radio broadcasts an offence punishable by forced labour.
- ▶ 1 August: General de Gaulle launches an appeal to French Canadians from London.
- ▶ 28 September: Radio-Belgique is established in London.
- ▶ 24 October: Regular news broadcasts begin in Ewe, Fanti, Hausa, Ga, Tiv and French in the Gold Coast (now Ghana).
- ▶ Radio Omdurman is created in Sudan to serve the Allied cause.

1941

- ▶ Radio Douala (Cameroon), broadcasts programmes in support of the Free French.
- ▶ Negus Haïle Selassie I sets up a radio station broadcasting 4 hours a day in Amharic, Arabic and English, independent of colonial control.
- ▶ Radio Nairobi (Kenya) broadcasts in Hindustani, Urdu and Gujarati.
- ▶ The Geneva Studio (Switzerland) begins broadcasts in support of humanitarian action by the International Red Cross.
- ▶ August: A commission led by Colonel W. Donovan is set up in the United States to combat Axis radio propaganda worldwide.
- ▶ The Yugoslav radio network is destroyed. A transmitter is built at Skopje. A clandestine transmitter of the Central Committee of the Communist Party of Croatia is established at Zagreb.
- ▶ Radio starts up in Northern Rhodesia (now Zambia).

1942

- ▶ 24 February: The Voice of America (VOA) starts short-wave broadcasts in English, French, Italian and German.

- ▶ 14 July: Following an appeal launched on the BBC, tens of thousands of French people gather around war memorials and then parade through the main streets of French towns.
- ▶ The Office of War Information (OWI) is set up in the United States.

1943

- ▶ 18 June: "Radio-Brazzaville-Voix de la France Combattante" is inaugurated in the Congo.
- ▶ Radio Kudu is set up at Hargeisa (Somalia) for the British army.
- ▶ The BBC starts broadcasting English-language lessons and halts its Russian-language broadcasts at the request of the Soviet government.
- ▶ 4 July: The American Forces Network (AFN) is set up.

1944

- ▶ Chinese communist stations in the Shaanxi-Yanan region start broadcasting.
- ▶ 1-5 June: Coded messages broadcast on the BBC announce the imminence of the Allied landings (which take place in Normandy, France, on 6 June) and alert resistance fighters for action.

1945

- ▶ 23 March: In France, all private radio stations are nationalized by decree and the state broadcasting monopoly is strengthened.
- ▶ 11 April: The Sarajevo (Yugoslavia) radio station starts broadcasting.
- ▶ 19 May: The Berlin Rundfunk starts broadcasting.
- ▶ 9 June: Radio broadcasting in the Soviet-occupied zone of Germany comes under the control of the Soviet military administration.
- ▶ 15 August: The Emperor of Japan makes his first radio broadcast, announcing his country's capitulation.
- ▶ 10 September: A memorandum on "Freedom of expression and freedom of the press" in Japan abolishes all restrictive laws promulgated under the previous regime.
- ▶ 11 December: A memorandum reorganizes NHK. Government control is abolished and private radio is banned. A committee of representatives of the Japanese people is formed. ■