

CREATING RADIO

Harry Davis and KDKA

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Announcer Leo Rosenberg and engineers
and operators in the KDKA studio for the
first broadcast, November 2, 1920.

HHC Detre L&A, gift of Westinghouse Electric Corporation, MSP 424.




KDKA studio on the roof of a building at Westinghouse's East Pittsburgh Works, c. 1920.

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KDKA transmitter, c. 1921. This transmitter retains some parts from Frank Conrad's original, used by KDKA to broadcast on November 2, 1920.

Courtesy of the Smithsonian Institution, National Museum of American History, Bering Center, L2007.33.3.

KDKA's broadcast of the election results of the Harding versus Cox presidential race on November 2, 1920, is often cited as the first commercial radio broadcast. In reality, a number of stations had been experimenting with this new form of communication technology for at least a decade.¹ While KDKA may not have made the first broadcast, the innovations demonstrated that evening and the new vision cast by KDKA for radio shifted the paradigm in how this technology would be understood and used in the years ahead. Key to the vision that drove Westinghouse in the days leading up to that November night and for years to come was the creativity and leadership of Harry P. Davis.



T.J. Vastine, Band Director for the
Westinghouse Employees Band,
selects music, 1921.
HHC Detre L&A, gift of Westinghouse
Electric Corporation, MSP 424.

Initially the company
approached radio as a
**POINT-TO-POINT
COMMUNICATIONS
TECHNOLOGY**

Davis grew up in Massachusetts, receiving a degree in mechanical engineering in 1890 from Worcester Polytechnic Institute. After earning an advanced degree in electrical engineering in 1891, Davis went to work for Westinghouse Electric and Manufacturing Company in East Pittsburgh. He spent his entire career with the company, rising quickly through the ranks as he demonstrated an inventive mind and generated dozens of patents for power generation and long distance power transmission. Named Manager of Engineering in 1904, Davis's leadership skills earned him a promotion in 1910 to Vice President in charge of manufacturing and engineering at WEMCO.

As the company increasingly focused on communication technologies, both for military and civilian uses, Davis gathered the pieces needed to make the yet unimagined field of radio broadcast possible. Westinghouse had designed and built transmitters and receivers for the military during World War I and realized as the war drew to a close that a potential consumer market existed. Initially the company approached radio, as most did at the time, as a point-to-point communications technology. Like the telephone, it linked two people, or in the case of Westinghouse, two manufacturing sites, together. But radio made the linkage without wires—saving on installation and maintenance costs. Referred to early on as a “wireless telephone,” the applications for radio resonated with corporations such as Westinghouse, the military who used it for marine and land communications, and with a small group of amateur radio operators. But it failed to capture the imagination of the public.

Amateur enthusiasts began to change that model. One “ham” radio operator, Frank Conrad, worked for Westinghouse and reported to Davis at the East Pittsburgh plant. He built a small studio on his garage in Wilkinsburg outside the city and began playing phonograph records over the airwaves



KDKA radio crew outside of the Syria Mosque in the Oakland neighborhood of Pittsburgh. The ability to broadcast live from an event enhanced KDKA's program offerings.

HHC Detre L&A, gift of Westinghouse Electric Corporation, MSP 424.

for the benefit of fellow operators. By broadcasting content intended for multiple listeners, operators like Conrad began to chart a new direction for radio as a tool for mass communication. A number of publications began to report on his experiments with the medium. In September 1920, QST, the official magazine of the American Radio Relay League, wrote about Conrad's station, 8XK, noting that his signal had been picked up as far away as New England and that his station was "dedicated to experimental work with radio transmission and reception."² Pittsburgh newspapers also covered these experiments, discussing a radio program by Conrad that included two orchestra numbers, a soprano solo, and a "juvenile talking piece" picked up by a wireless set installed at Horne's department store.³

Harry Davis read the articles on Conrad's work and noted the interest that retailers such

as Horne's had in teaching consumers how to use radio, by offering a working radio set in the store, then turning that new fascination with the medium into a sale. He saw that the potential existed for Westinghouse to develop consumer demand for the radio sets they manufactured by providing something new and unique—programming broadcast by radio. To sell radios he needed a station and programming and to make radio stations viable, consumers needed radios to listen. Or as Davis surmised, "A broadcast station is a rather useless enterprise if there is no one to listen to it."⁴ To make this vision a reality Davis oversaw the building of a radio studio on the roof of one of the buildings at Westinghouse's East Pittsburgh plant. He also purchased the International Radio Telegraph Co., which held patents critical to the technology and owned several stations based in Chicago, Springfield, Mass., Newark, N.J., and New York City. At

the same time, Davis applied for a limited commercial license for Westinghouse and was assigned the call letters KDKA. Though this license did not explicitly mention broadcasting, it became the entry point for KDKA into commercial transmission over the airwaves.

Simultaneously, Davis convened an internal group of advisors to assist in developing "the instrument that would prove to be the greatest and most direct means of mass communication and mass education that had ever appeared."⁵ This group included Conrad, but also S.M. Kintner, Manager of the Research Department, O.J. Schairer, Manager of the Patent Department, and L.W. Chubb, Manager of the Radio Engineering Department. The Manager of the Sales Department, M.C. Ripinski, and the General Advertising Manager, J.C. McQuiston, rounded out the group. Davis recognized that the future demanded a team



◀ Aeriola Sr., radio receiver made by Westinghouse Electric and Mfg. Co., c. 1922. Listeners used headphones to access sound on this popular radio model.

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Photo by Courtney Keel Becraft.

Aeriola Jr., radio made by ▶ Westinghouse Electric and Mfg. Co., East Springfield Works, Ma., c. 1921. A December 1921 holiday advertisement offers these sets for \$25. Copy on the same page describes radio as “a unique combination of utility and entertainment ... intensely interesting to every member of the family.”

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Photo by Courtney Keel Becraft.



composed of technology experts, but also a group that understood the consumer and the marketplace. From the beginning, Davis saw that public interest had to be built and maintained to make radio a viable economic enterprise both on the manufacturing and the broadcast sides.

The group set five main objectives. The first targeted work with the press to communicate and share information. Davis believed that radio needed the newspaper to communicate programming schedules and to build interest in the medium with a broad public audience. A prior relationship with A.E. Braun, head of the *Pittsburgh Post* and the *Pittsburgh Sun* made this possible. In addition, the group planned to develop programming that had broad appeal and variety, that was

continuous and happened every day of the year, and that had a regular schedule. Davis used the analogy of a railroad timetable to describe these aims—Westinghouse needed to develop a schedule for their station, KDKA, so the public knew when to tune in and listen. Programming had to be engaging to drive interest and attract a following.⁶

The group believed that KDKA's first broadcast should be “spectacular” to attract attention.⁷ With a presidential election fast approaching, they decided that KDKA, working with the newspapers, would broadcast the election results on the evening of November 2, 1920. Results would be gathered in the offices of the *Pittsburgh Post*, then relayed by telephone to the East Pittsburgh plant for on air broadcast. With a system to

gather information in place, Westinghouse now needed an audience. Working again with Braun's newspapers, KDKA began to announce their radio premier, as well as programming to occur on subsequent nights. Realizing however that the owners of radio receivers were few, the company also made and gave away cheap radio sets to officers and friends of the company. In addition, they set up listening spots throughout the city where groups could gather and tune in to the station for the event. In Davis' words, “Thus was the first broadcast audience drafted.”⁸

Leo Rosenberg, from the publicity department at Westinghouse, read the results on air that night, becoming KDKA's first announcer. Three other men joined him in the studio—the company's telephone manager

who monitored the line, a man named McClellan who took down the results and gave them to Rosenberg, and an engineer.⁹ Frank Conrad, whose work had paved the way for this broadcast, hunkered down in his home studio in Wilksburg in case problems precluded the East Pittsburgh studio from transmitting. To determine if anyone heard the broadcast, Rosenberg asked people to send him letters if they had listened to the program. Hundreds later arrived at Westinghouse's offices.¹⁰

Reviews were positive, *The Gazette Times* reported: "The returns by wireless telephone, which were transmitted from the Westinghouse international radio station at East Pittsburgh, were exceptionally clear and distinct."¹¹ But hundreds of listeners did not guarantee a successful business model. Davis knew he had to grow demand for radio sets and build an engaging schedule of programming to drive that demand. Westinghouse advertised aggressively in the newspapers to sell radio sets. As important, KDKA began to build a reliable, full schedule of programming. The first few months the station continued in Conrad's mode, playing phonograph records. Eventually they built a larger, rudimentary studio and enlisted the Westinghouse Band, made up of employees, and other groups to perform. This led to a more permanent studio structure with burlap padded walls to better control the sound.

As the company gained mastery over the technology, they ventured out into the community, adding ever more innovative programming to the schedule. KDKA became the first to broadcast church services, going live on Sunday mornings from Calvary Episcopal Church in the East End of the city. This continued from the first broadcast on January 2, 1921, until 1962, making Dr. E.J. Van Etten the first radio minister. Just two weeks later, KDKA beamed out a radio address by Herbert Hoover from the Duquesne Club. KDKA added sports programming in April 1921, carrying the first live voice broadcast

of a 10-round boxing match between Johnny Ray and Johnny Dundee from Motor Square Garden in Pittsburgh. Davis Cup tennis and then baseball followed with broadcaster Harold W. Arlin announcing the Pirates-Phillies game on August 5. KDKA added college football to its broadcasts, calling the University of Pittsburgh versus West Virginia Backyard Brawl from Forbes Field on October 8.¹²

With slots featuring sports, politics, religion, music, and theater, KDKA began to build an audience. Their Aeriola radio, which sold for \$25 and other units as inexpensive as \$10, made a radio set affordable to most. The reach of the station through its affiliates, added as part of the International Radio purchase, extended the potential audience throughout the Northeast and Midwest. Growth was slow at first but radio set ownership increased in 1922–23 from about 60,000 to 1.5 million sets across the country.¹³ By 1924 there were 563 licensed broadcast stations and 5 million receiving sets nationwide. By World War II, 90% of American homes had radios and even a quarter of new automobiles included radio.¹⁴ On-air advertising began to contribute to the bottom line in 1926 and popular nationally sponsored programming such as The Philco Hour followed.

Before his death in 1931, Davis witnessed the beginning of the golden age of radio. The medium succeeded just as he had envisioned, with Westinghouse playing a key role in innovating in the transmission of radio, the production of simple, affordable radio sets, and the development of KDKA, a pioneering station that has broadcast continuously for 100 years. Able to "annihilate distance," radio achieved what Davis had forecast in 1921: "The importance of reaching tremendous numbers of people, with practically no effort, offers great possibilities for advertising and the distribution of new and important facts, and in reality introduces a 'universal speaking service.'"¹⁵



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¹ Ruben, Marina Koestler, "Radio Activity: The 100th Anniversary of Public Broadcasting," *Smithsonian Magazine*, January 26, 2010, at www.smithsonianmag.com/history/radio-activity-the-100th-anniversary-of-public-broadcasting-6555594/. The author credits inventor Lee deForest's transmission from the Metropolitan Opera House in New York on January 13, 1910, as the first public radio broadcast.

² "Amateur Radio Stations," *QST*, Sept. 1920, p. 32.

³ *The Pittsburgh Press*, Sept. 29, 1920.

⁴ Davis, H.P., "The Early History of Broadcasting in the United States," Chap. VII in *The Radio Industry: The Story of its Development* (New York: A.W. Shaw Co., 1928), p. 197.

⁵ *Ibid.*, p. 194.

⁶ *Ibid.*, pgs. 195-197.

⁷ *Ibid.*, p. 197.

⁸ *Ibid.*, p. 197.

⁹ Rosenberg, Leo, Interview with Judy Flander, *The Washington Star*, Dec. 23, 1976, at <https://medium.com/the-judy-flander-interview/radios-first-announcer>.

¹⁰ *Ibid.*

¹¹ *The Gazette Times*, November 7, 1920.

¹² Schneider, John, "The Beginning of Sports Broadcasting and Radio's First Sportscasters," in *Spectrum Monitor Magazine*, December, 2017.

¹³ Binns, Jack, "Setting the Pace in Radio," *Popular Science Monthly*, v. 105, July-Dec. 1924, pgs. 65-66.

¹⁴ Ruben, online.

¹⁵ Davis, p. 195, 207.