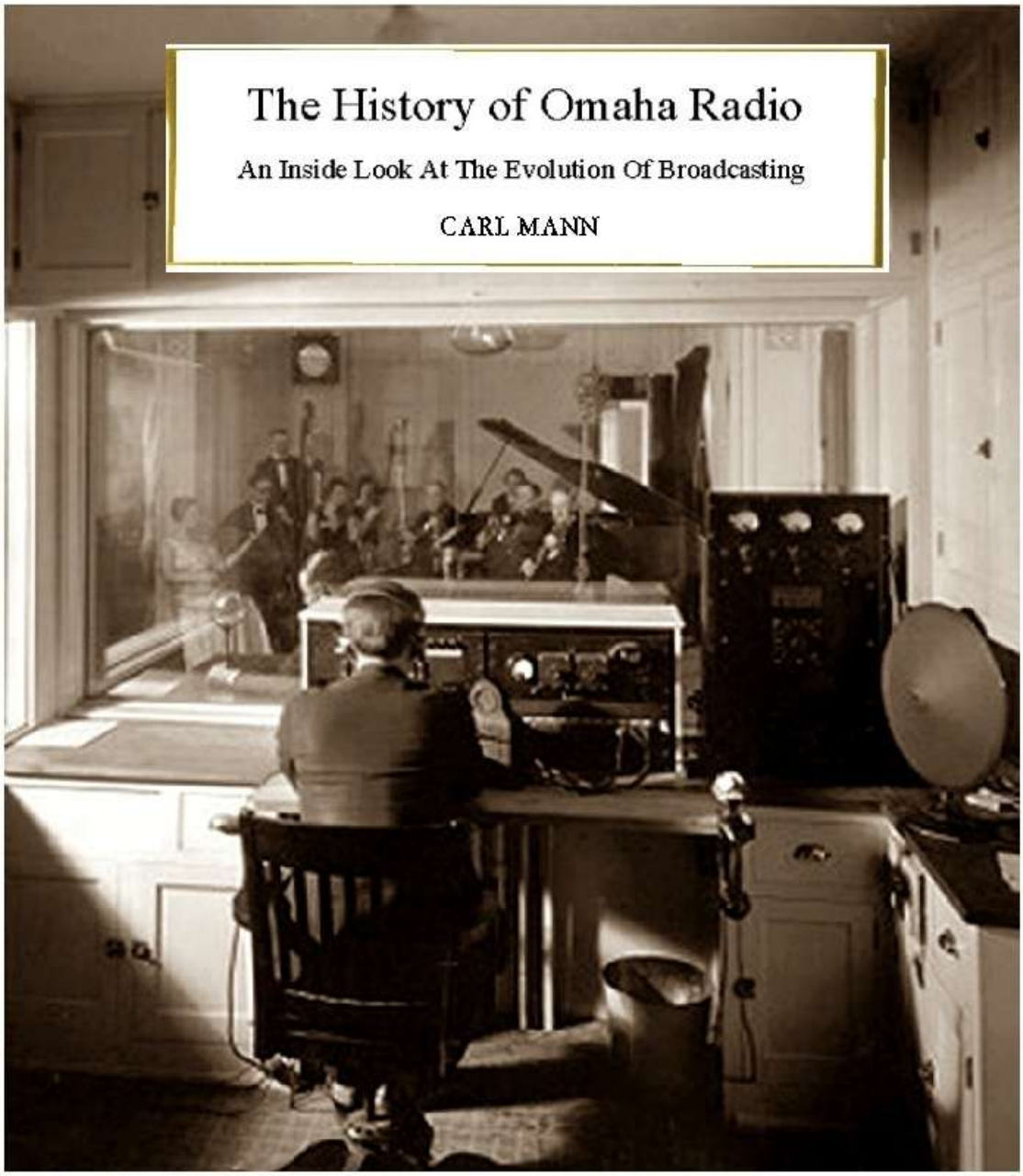

Volume One – 1899 to 1945

Third Revised Edition 2022

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PREFACE

What would it have been like to work in radio during its dawning years? What would a listener hear while scanning the frequencies as stations were just beginning to appear? How exciting it must have been to be involved with such a marvel.

These thoughts only came to me in much later years while following a calling to radio. As a youngster, it was much different. Distant voices and music coming from out of the air at the twist of a dial mesmerized. Its entertainment created adventure and new-found friends in a young imagination.

As my parents drove by the rural transmitter building of KFAB one night, I looked upward to its three tall towers outlined by red beacons silently blinking in the dark sky. I knew that, amazingly, a flood of words and music was somehow pouring out from those majestic towers, reaching far beyond the moonlit horizon.

Later while working in radio I would wonder what it would have been like to play records over the air in the 1920s, all the while tuning and maintaining the primitive transmitter quietly flinging its information-laden signal to unseen thousands. And, how did this magic in my home town come to be?

With this, I embarked on an exploration to see how it all went down for those who traveled this road before me. Research began. Books, then the Internet, and soon a picture formed of what earlier radio professionals endured and enjoyed. Enough so that I could imagine myself running an arc transmitter or introducing scratchy recordings to strangers at unbelievable distances.

I also wondered what the AM band would sound like to the early listener tuning around at home. Instead of a band awash with voices and melodies like today, one would eavesdrop on distant broadcast stations mixed with ships and amateur communications, many in Morse code.

What emerged is the story of radio broadcasting as witnessed from a singular region’s point of view. Omaha’s setting is an ideal cross-section of Americana, both rural and urban. This region experienced nearly all developments of radio, missing only the earliest round of FM pioneering that was primarily confined to New England. The city also had its share of “firsts” in radio, most notably the move from block programming to music formats, an idea forged by Omahan Todd Storz and his 500-watt daytime station.

Radio's past is often quite murky with many areas of contradiction and ambiguity. It's delivered here in a biographical form. It's an attempt to detail radio’s history as specific Omaha area stations reached the air. This work will show how educators, engineers, businessmen, and talent combined to evolve a medium of entertainment and information in the face of fast-changing technology and legalities.

Though the narrative is delivered as comprehensive storytelling, the reader is encouraged to simply look up andr skip to areas of interest. It’s understood that only portions of this work will appeal to those of various interests in broadcasting and history, with focuses likely on specific themes, eras, stations, people, events, or background material. It is hoped that this work will serve to preserve, enlighten, and satisfy.

ACKNOWLEDGMENTS

Documenting radio's early years relies on spotty, ambiguous, and often incomplete and inaccurate record keeping. Assembling a comprehensive history involves piecing lots of puzzle pieces together and then playing detective.

The workhorse sources of this project were the archives of the *Omaha World-Herald* and the dozens of publications preserved in David Gleason's amazing website WorldRadioHistory.com. Also invaluable from government sites were the Radio Service Bulletins that best document the incremental changes in a station's history during its beginning years. Information credited to the WOW Archives was made available by permission through the Nebraska Broadcaster's Association.

Other newspapers to acknowledge are the *Lincoln Journal Star,* the *Plattsmouth Journal*, the *Wayne Herald,* and the *New York Times*.

Numerous periodicals that came and went during radio's early stages turning up nuggets in this research were Telephone And Telegraph Age, Radio Digest, QST, Radio News (Ziff Davis), Popular Science Monthly (1922 issue), Editor And Publisher, Radio Volume 4 (Pacific Radio Publishing Company), Radio Age Magazine, New Science And Invention In Pictures- Vol 8 (1920 publication), Popular Radio Incorporated (1922, piece authored by Kendall Banning), Broadcasting Magazine, and Rural Radio.

Other publications contributing bits and pieces were the Nebraska Blue Book (Nebraska Legislative Council 1915), Central High Register (Omaha, 1921), The Wireless Age (1921), Nebraska Blue Print (1920), Lincoln Nebraska State Journal (1924), the Antique Wireless Association, the WOW Tower monthly publication, and RADEX (Radio Index for DXers).

Photo and illustration sources outside the author's collection of paraphernalia and brochures are credited to their source, particularly to the *Omaha World-Herald*. Photos credited to the Durham Museum are used by paid permission from the KMTV/Bostwick-Frohardt Photograph Collection, permanently housed at The Durham Museum.

Most importantly are the individuals whose contributions are acknowledged with gratitude: Michelle Gullett of the *Omaha World-Herald*, Bill Gonzalez and Becky Putzer of the Durham Museum, Paul Eisloeffer and Martha Miller of the Nebraska State Historical Society, Larry Walklin of the University of Nebraska, Dick Warner of the Pottawattamie County Historical Society, Jim Timm and Marty Riemenschneider of the Nebraska Broadcasters Association, David Gleason webmaster of WorldRadioHistory.com, Barry Mishkind, webmaster of the Broadcasters Desktop Resource at theBDR.net, WJAG Historians Mark Smith and Jerry Jaroska, radio engineer, writer, and historian Mark Durenberger, and thesis writer Robert Earl Lee.

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INTRODUCTION

This is one of three volumes covering the development of broadcasting from its emergence, through the Golden Age and concluding at the end of the war years. Many of the details of radio broadcast history, especially in the 1920s, are murky, spotty, and ambiguous. Besides basic information on ownership, call letters, and dates of operation, each twist and turn of a station's history, including changes of power, assignment, and change of call letters has been traced as much as possible.

The second volume will cover the music and news years when Omaha radio pioneered a popular music format that went national replacing block programming that in turn fragmented into separate genres. The third will show how radio went corporate in order to face the challenges of increased competition from within and from new forms of media. They are available at OmahaRadioHistory.com as long as that website is active.

"Omaha" in this work is more accurately a region. The central market in this two-state region is commonly referred to as Omaha-Council Bluffs, in Nebraska and Iowa respectively.

Two smaller nearby markets are closely intertwined and their stories are touched upon as well. Lincoln, about 45 miles southwest of Omaha, is where one of Omaha's major stations got its start. Shenandoah, in Iowa about 60 miles southeast of Omaha, was home to a pair of pioneer stations that were very much a part of Omaha's story.

Some smaller nearby towns also played roles: Fremont, Plattsmouth, and Blair on the fringes of Omaha were home to contributing stations. Carter Lake, Iowa, a community nearly encompassed by Omaha on the Nebraska side of the Missouri River, had a station of its own for just over a year. The parts these stations played are covered here as are a scattering of Eastern Nebraska and Southwest Iowa communities where hobbyists and businesses took to the air during radio's earliest years while it was still a curious novelty.

The technical and legal aspects of radio's growth are a significant part of the narrative but the detail is kept separate, dealt with in close-ups at each chapter's conclusion.

Many people who made the story happen are named, with their backgrounds and futures described where known. Many more are inadvertently missed.

While tracking the twists and turns of each station, its call letters, assignments, ownership, all stations are frequently identified by call letters and frequency together in this work. This is significant as each station's facilities can be tracked more accurately as they move around on the radio dial and as they change call letters.

CHAPTER ONE – THE FIRST SIGNALS

"In those days, the piano and the Victrola were the centers of home entertainment. There were as few radios as there were radio stations, and those that were available were complicated to operate. They had three to five dials that had to be positioned exactly in order to tune in a station. Once the proper settings were established, the speakers emitted a combination of whistles, crackles, screeches and other static sounds. Add to that the fact that the speaker was a giant horn, and the result was a mixture of sounds that was far from pleasing to the ear." --Lee Baron, 1930s and 1940s bandleader and Omaha radio personality from 1947 into the 1980s. (Odyssey of the Midnight Flyer by Eldon Vernon Lee, 1987)

WIRELESS STUDIES AT THE UNIVERSITY OF NEBRASKA

Early mentions of wireless in Nebraska began well before the turn of the century when radio signals were recognized as evident but still not fully understood. When Marconi's experiments in 1895 proved wireless as workable, it was just four years later that Wireless Studies classes at the University of Nebraska were organized.

In just a few more short years experimenters were building transmitters while small groups of listeners giddily sought out distant signals, both activities becoming a scientific sport That the new marvel was seen primarily as a tool for communication failed to take into account the eavesdroppers. . The latter group was perhaps the first catalyst for radio communication becoming broadcasting, the distinction between those two uses still years away from being recognized. "Listening in" lead to the casual dissemination of information, then light entertainment. The first broadcast stations may have been decades away, but the first broadcasts were happening well before then. They just weren't yet recognized as broadcasts.

Radio in Omaha, as elsewhere, was shepherded in by educators and hobbyists, followed by businessmen. Starting with the educators, wireless studies were a relatively new venture, even though the basics had been discovered over thirty years earlier. German scientist Heinrich Hertz in 1886 found that a spark across a gap would send a wave of energy across his lab to another gap where a smaller spark would materialize. This confirmed James Clerk Maxwell's 1865 theory of electromagnetism traveling at the speed of light.

The University of Nebraska designed and built experimental spark transmitters for use in class. Initially, crystal detectors were employed for receiving while spark gap transmitters and arc generator transmitters were the sending apparatus. The early listener heard only an occasional series of dots and dashes on the just-born radio dial.

The ether's usefulness was just being put to use. The U.S. Navy replaced visual signaling and carrier pigeons with wireless in 1901. The weather bureau adopted wireless for getting information out in 1904. Though by this time many ocean-going vessels were equipped with wireless, it took the 1912 *Titanic* disaster to move its importance from novelty to necessity.

The University of Nebraska's experimental station was sending code messages by 1909. As the novelty wore off, the messages added some useful content, with weather and market reports being regularly broadcast by 1916.

Audio modulation was soon developed allowing voice and music to be aired on those carrier waves, which until then were only on and off transmissions in quick sequences of short and long signals that corresponded to Morse code earlier developed for the telegraph.

The general public was unaware of these transmissions until news reports. *The New York Times* reported in 1909 (*NYT* Dec 22) that radio pioneer Reginald Fessenden's widely-heard voice transmissions from Brant Rock, Massachusetts had been logged in Omaha at the Union Pacific Wireless Station.

(Fessenden is well-known from historical accounts as having aired the first voice transmissions from Brant Rock, Massachusetts, but most show it as happening on Christmas Eve 1906. This has since been corrected as having actually occurred in 1909 on December 21, further corroborated by the *New York Times* and *Omaha World-Herald* stories of Dec 22, 1909.)

It wasn't just Fessenden. Before year's end, audio entertainment appeared from elsewhere, though merely a novelty for those who had a receiver, those few being the amateur radio community and workers in professional ship-to-shore communications.

The transmissions were rarely scheduled. These amateurs signed on whenever the bug bit, airing readings and scratchy recordings, with some individuals becoming personalities in their growing listening core. Most notable were Lee DeForest, inventor of the triode vacuum tube, and Charles "Doc" Herrold in San Jose, California, who in 1912 by some accounts was the first to broadcast such entertainment on a regular schedule.

Audio fidelity was primitive. Herrold and DeForest were using arc transmitters driven by a hissing electric arc that beyond the novelty of hearing voice and music would become annoying to the listener.

Other such “broadcasters” joined in, well before the 1920 establishment of KDKA Pittsburgh which has long been arbitrarily promoted as America’s first station with its broadcast of the Harding presidential election results.

As radiotelephony (radio transmitting audio) progressed, it’s novelty expanded to an interest in distance. It became a hobby to see how far one could hear and identify a distant station. Listener clubs sprang up with members patiently seeking signals from outlying regions of the country. The first Omaha Wireless Club was formed in 1910 by four teens who built their own receiving equipment. They estimated about 15 receiving stations existed in Omaha with four sending stations. (*OWH* Jan 2, 1910)

The first broadcast stations were still over a decade away, but the first broadcasts were already happening for eager ears like those in Omaha.

GOVERNMENT REGULATION BEGINS

In late 1912 licensing of radio stations by the government was outlined, the responsibility falling to the Commerce Department. Stations would be assigned unique call signs. Ships and shore stations fell in the Commercial category. The other station categories were Government and Amateur, plus a Special Land Stations category. The Land Stations were grouped into three types of licenses: Experimental, Technical Training School, and Special Amateur Stations. It’s from this Special Land Stations category that broadcast licensing would emerge.

Omaha’s earliest license listings were for government station WUH which was the Army Signal Corps station at Fort Omaha, and KDEF licensed to the U.S. Post Office.

WUH Fort Omaha 1913

Not surprisingly the War Department took an early interest in wireless for use in national defense. The Signal Corps set up stations in the Midwest in 1910 with Fort Omaha’s tower and installation up and manned by the end of that year. Full operations began at the start of 1911.

(Fort Omaha, at 5730 North 30th Street, started out as an Indian War-era U.S. Army supply post. It became a base for Army experiments with dirigibles in 1907. That program evolved into a balloon program as part of the American Expeditionary Forces that was later moved to Texas in 1918.)

Other posts setting up wireless telegraph included Fort Riley and Fort Leavenworth, both in Kansas, and Fort Leonard Wood in Missouri. The purpose was to reliably replace telegraphy lines between Army posts. The War Department planned to also equip Cheyenne and Denver for the network (*Telephone and Telegraph Age*, J.B. Taltavall, 1911).

The Fort Omaha Signal Corp station was licensed as WUH in 1913. It was equipped with a three-kilowatt transmitter feeding an umbrella aerial atop a 175-foot tower. The station operated on 1600 meters and could be heard for at least 300 miles "even under the most unfavorable conditions." (*Nebraska Blue Book*, Nebraska Legislative Council. 1915).

At the time, WUH was only one of six licensed stations in Nebraska, the others being amateur stations. The earliest Omaha amateurs were Port H. Quinby with the calls 9AY and G. J. Gerard as 9AZ, both licensed in September 1913. (*Nebraska Blue Book*, Nebraska Legislative Council, 1915).

1921 AkSarBen Field. (© Durham Museum)

In 1920 the instructor at Fort Omaha was wireless expert Dr. Frederick Millener. He was placed in charge as Chief of Radio and Electrical Experimental work at the post. Millener had over a dozen wireless patents by this time.

(Millener was earlier employed by Union Pacific Railroad, a company also interested in the new wireless technology for its possible communications with trains. But after eight years and seven-thousand dollars of railroad funding, his attempts at outfitting a U. P. rail car with radiotelephone were met with limited success.)

Fort Omaha added WVU in 1922 after losing out on a big War Department communications contract that went at the last minute to Fort Crook, today's Offutt Air Base. WVU did mostly experimental work and was used for Signal Corps training in wireless.

KDEF U. S. Post Office Station 1915-1927

The Post Office Department developed a chain of stations in the belief it was part of its mission to carry information to the public. The service was called *Air Mail Radio Service*. For a short period in 1921, The Department. of Agriculture was invited to use these stations to distribute market updates, a service that lasted over a year.

KDEF is listed as early as 1915 as one of the first four such stations in the burgeoning Post Office network.

By 1920 KDEF is shown as an *Air Mail Station* in the network of stations having similar calls in St. Louis, Cheyenne, Salt Lake City, Elko, and Reno (Radio Service Bulletin Sept 1920). Stations in North Platte and Rock Springs, Wyoming, were added a short time later (Radio Service Bulletin Nov 1920).

The physical location for KDEF is unknown with certainty until 1920 when the station was moved to AkSarBen Airfield on what were then the southwest fringes of Omaha, just northeast of 67th and Center Streets.

KDEF operations began from the airfield in September that year. It relayed weather and flight operations data plus other government messages point-to-point on the network that eventually reached the West Coast. It was a terrestrial service as very few aircraft had radios.

AkSarBen field had become a way station for airmail aircraft just months earlier. Pilot Ray Benedict landed there on April 15 with the first airmail from Chicago, and William DeWald piloted the return flight the same day. The Omaha-San Francisco leg of the transcontinental route was opened by Pilot Buck Heforn the following September.

The Post Office took on the task of relaying agriculture market reports on their stations starting in April 1921. KDEF sent out market reports several times a day in Morse code over 2500 meters/120 kHz Long Wave. The market and weather reports were picked up by amateur operators within the coverage of KDEF who then distributed them to farmers and other agricultural interests. Receivers were not yet in abundance at the time and ham operators were instrumental in relaying news, weather, and even sporting event outcomes.

When the Post Office decided to fly full-time night air mail in 1924, it determined AkSarBen was unsuitable and moved all air mail service to Fort Crook Airfield near Bellevue about 12 miles south of Omaha. With a hanger, runway lighting, offices, and the tower, the field became a way station for airmail pilots to refuel.

KDEF made the move to Fort Crook Airfield as well. The new operation was on 222 meters/1351 kHz with 100 watts and was now equipped to provide voice service. KDEF communicated weather reports airport to airport that helped guide night time airmail pilots crossing the country from New York to San Francisco.

The station engineer and chief operator at this time was C. A. Hemple who was instrumental in putting Omaha's first commercial broadcast station, WAAW, on the air two years earlier (*Radio Digest* August 1924).

Clearly the post office network was becoming a service for aviation. The end for KDEF came in 1927 after the Air Commerce Act of 1926 transferred all Post Office stations to the newly-created Aeronautics Branch.

As new systems for ground to air communication and navigation beacons were being developed, the Post Office station licenses were switched to navigational beacon service. KDEF was changed to KJF Omaha in 1927 as a navigation beacon on 320 kHz that also aired regularly scheduled weather reports. (RSB January 1928).

(AkSarBen Field was damaged by a tornado in 1924. The site was abandoned and taken over by the AkSarBen race track which became a popular horse racing venue into the 1990s.

(Fort Crook's Offutt Field was renamed Offutt Air Force Base in 1924. By 1948 it was the home of the Strategic Air Command, renamed Stratcom in 1992.)

SPECIAL LAND STATIONS BEGIN EMERGING IN THE MIDWEST

9YT Wayne 1915-1924

The licensee for 9YT was Mr. U. S. Conn, president of State Normal School, the forerunner to today's Wayne State Teachers College (FCC Radio Service Bulletin Dec 1915). The school's Physical Science Club used the station to experiment with wireless communication.

After being silenced during the war, 9YT returned in 1920 newly-licensed to the State Normal School rather than to Mr. Conn (FCC Radio Service Bulletin May 1920).

The station later began broadcasting voice and music. Newspapers reported the first broadcast January 20, 1922, "A radio concert was sent out over the wireless from Wayne State Teachers College on Friday evening and reports coming in state that the music was heard plainly and distinctly within a radius of 100 miles.

"The program consisted of vocal numbers by Miss Ferne and Miss Frances Oman and instrumental selections by Prof. W. C. Hunter and other members of a string quartet. Neligh, Pierce, Hooper, Norfolk and Lincoln were among the stations which reported that the concert was heard." (*The Wayne Herald*, Jan 25, 1922).

9YT's radiotelephone broadcasts were likely a first for Northeast Nebraska, predating by several months those of pioneer station WJAG Norfolk which signed on September 13.

9YT was deleted in mid-1924 (RSB July 1924). The school operated radiotelegraph station 9WK on shortwave later in the decade, followed in 1926-1928 by commercial station KGCH from Wayne Hospital. The school, now renamed Nebraska State Teacher's College, had half interest in KGCH.

9XT Lincoln 1915 - 1916

A short-lived station, 9XT was licensed November 1915 to Thomas C. Rice, authorized to operate on 300 and 450 meters (RSB Dec 1915). It was deleted five months later.

9XU Omaha 1916

9XU Omaha licensed for 800 meters belonged to Union Pacific Railroad (FCC Radio Service Bulletin Aug 1916). Listed as a private special land station, 9XU operated into the early 1920s, possibly for communication with other stations as well as testing its use with moving trains which by this time proving to be a disappointment. Radio equipment on the rails at this time was too cumbersome and difficult to operate, the equipment taking up much of a rail car.

9YD University Place (Lincoln) 1916

Nebraska Wesleyan University in Lincoln, already experimenting with wireless transmissions, was licensed as 9YD in March 1916 (FCC Radio Service Bulletin Apr 1916). It was authorized 300 and 458 meters and eventually communicated with other stations up to 800 miles away.

Physics Professor John C. Jensen built the school's experimental spark transmitter in 1914 for just 50 dollars. Before joining Wesleyan, Jensen won an exhibition prize at the 1906 Nebraska State Fair for his home-built radio transmitter. He was the director of the radio labs for war training at the University of Nebraska until 1918.

9YD was using Jensen's 1000 watt spark transmitter for daily weather and news in 1914, all financed by the University. This continued until the shutdown order at the start of the World War.

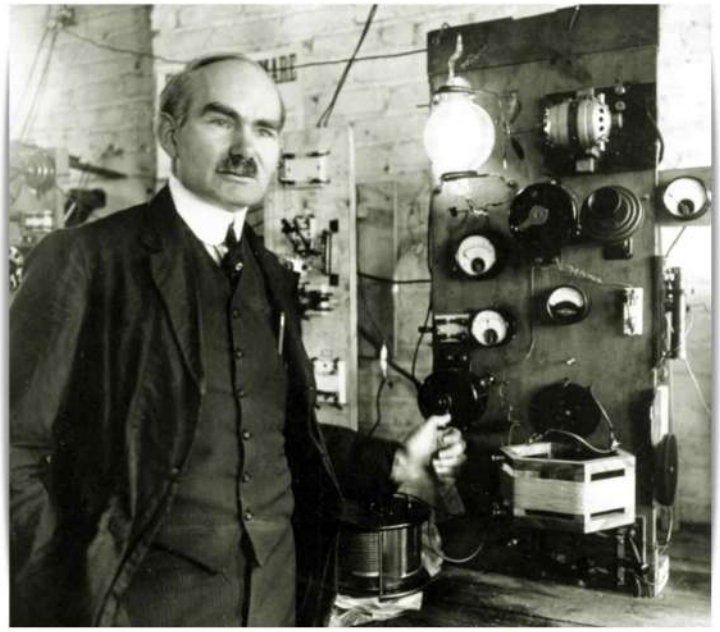
After the war, Wesleyan's 9YD experimented with voice transmissions in October 1920, replacing the spark transmitter with a 20-watt phone unit. In 1922 9YD was ordered to apply for a separate class broadcast license to match its service.

Dr. Jensen's station was licensed separately as WCAJ in May 1922, claiming to be the first radio station in the state to broadcast both voice and music. It was also likely Nebraska's earliest, if not the first, educational broadcast station. It operated from the C. C. White Building on campus.

With WCAJ now operating separately, the 9YD experimental license was authorized for the higher frequencies above 1350 kHz, the upper limits of the broadcast band at the time (May 1923). Work on the higher frequencies likely never followed as the 9YD license was deleted later in the year.

COUNCIL BLUFFS NATIVE LEE DEFOREST INTRODUCES THE TRIODE

Radio transmissions were initially believed to be line-of-sight but actually went over the horizon hugging the ground until weakening into the natural noise levels in the distance. This "ground wave" reach rapidly becomes shorter as the frequency increases, or as wavelengths decrease, the two being inversely proportional. But more revelations were on the horizon as the vacuum tube continued to develop.



Lee DeForest and his audion tube.

The vacuum tube had been around since 1904, but only as a diode with two distinct uses: rectifying alternating current into direct current and for use in the detector circuit that converted signals to audio in receivers. More uses came into play when a third element was introduced inside the two-element tube by Council Bluffs native Lee DeForest in 1910, making it a triode.

It's said DeForest didn't understand exactly how the triode worked, but after a couple of years its uses were discovered with help from others and it became a game changer. DeForest's triode revolutionized radio creating the field of electronics.

The triode vastly improved voice transmission. With new circuitry designed around it, it could oscillate or amplify. As an oscillator it could generate a signal. The oscillation created a continuous wave that the high-frequency spark, alternator, and arc transmitters currently in use could not produce. This made audio transmission easier and cleaner.

In amplification usage, it could increase the power of a transmitter and amplify previously unheard signals in a receiver. For reception, Edwin Armstrong used triodes to invent the regenerative circuit for receivers in 1912. Suddenly he was hearing distant signals as far away as Hawaii from his New York home. His regenerative receiver circuit was patented in 1914.

These receivers were still quite primitive. They required bulky batteries to provide voltage for the circuits and a separate set of batteries for heating the vacuum tube filaments. The sets had multiple dials for tuning, often resulting in screeching howls until finally dialed correctly to the desired station.

Vacuum tubes were poised to become the standard for making both receiving and transmitting a modern reality for decades. Spark transmitters were on the way out. Receivers would improve and become more sensitive and selective, and equally important, easier to tune. The full understanding of radio's propagation ability was on the horizon. Much of this development will arrive under government control as the world goes to war.

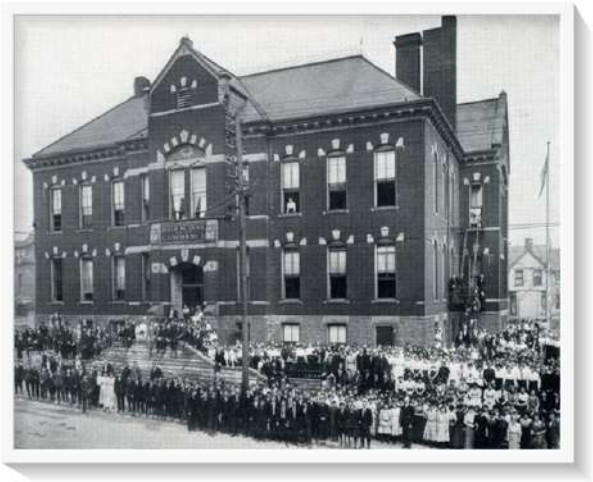
THE WORLD WAR AND RADIO

Radio development shifted to the military as the U.S. entered World War I. Stations and receiving equipment were ordered shut down or were taken over by the U.S. Navy. The proliferating patent disputes were suspended as inventors were ordered to focus on production.

From 1917 to 1919 the government handled the growth of radio's technology. Design and production accelerated.

There also was developing a fresh crop of men trained to use those developments. Radio classes were started at the Omaha High School of Commerce at 1706 Leavenworth Street in 1917. Students would train for licensing for duty in government radio services.

Edwin Armstrong was commissioned as an officer in the Signal Corps and assigned to a lab in Paris to further develop radio technology. Meanwhile, he gave the military free use of his patents during the war.



Omaha High School of Commerce, 1706 Leavenworth Street, 1912 photo.

Armstrong's difficult-to-tune regenerative receiver was soon replaced by his superheterodyne receiver, a design he unveiled in 1918. This new receiver made tuning for stations simple, done with one twist of the dial instead of the constant re-tuning of various knobs once required. Soon, super sensitive receivers could hear multitudes of stations from great distances, all beginning to noisily interfere with each other.

These technical developments were released to the public at war's end. Soon afterward, a smattering of broadcasting stations appeared. What followed was a new-found enthusiasm among throngs of curious listeners who eagerly sought out voices and scratchy music among the mix of dots and dashes coming from ships, transoceanic stations, communication stations, and amateurs.

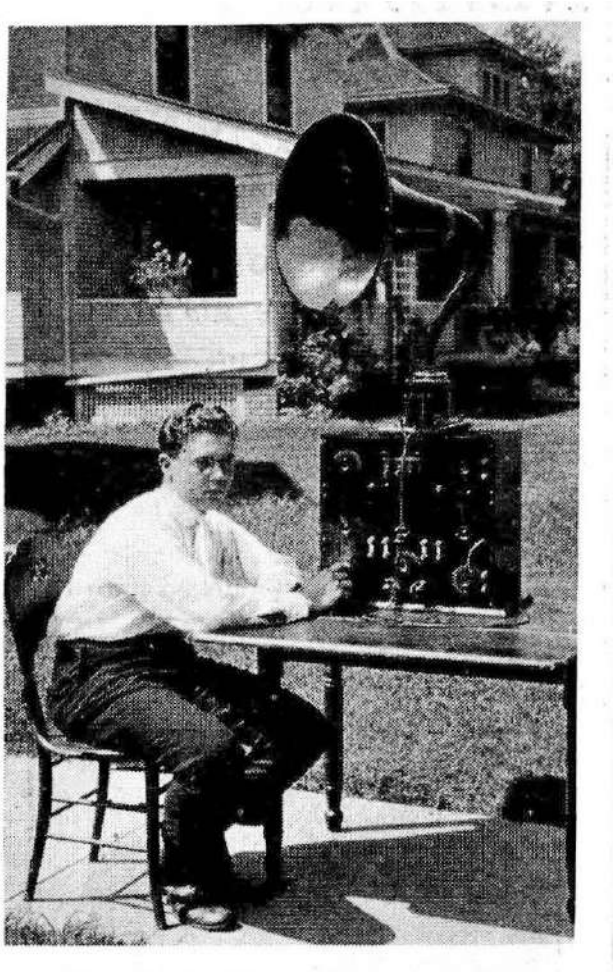
1920 - THE BUDDING OF BROADCASTING

Broadcasting took off in the Roaring Twenties. It grew from everywhere, including Omaha.

Licensing resumed after the war in the summer of 1919. Hundreds of amateur stations soon populated the band by 1920. About 30 were in Omaha, most licensed to individuals, some with a short interest span allowing their licenses to lapse.

Few saw the leap to broadcasting. However, some licensees were beginning to gravitate toward serving that very purpose. They were discovering the "radio listener."

A growing mass of average Americans were buying receivers seeking entertainment and information from this curious new marvel. Distant programs were being clearly heard in Omaha from as far away as Chicago, Detroit, Pittsburgh, and New York. Omaha and Lincoln were poised to add their voices to the ether's mix. Going the direction of information and entertainment broadcasting was the University of Nebraska in Lincoln and a radio enthusiast in Omaha.



17-year-old Ronald Rockwell demonstrating his wireless receiver outside his home on Capitol Avenue, 1921. (Central High School Register)

9VE Omaha 1920

In 1920 the ham publication QST noted: "it is the rare evening that the human voice and strains of music do not come in over the air" (*QST* Sept 1920). A few amateurs providing entertainment were becoming quasi-celebrities. That soon included a Central High School student, Ronald Rockwell, broadcasting from his home at 5019 Capitol Avenue.

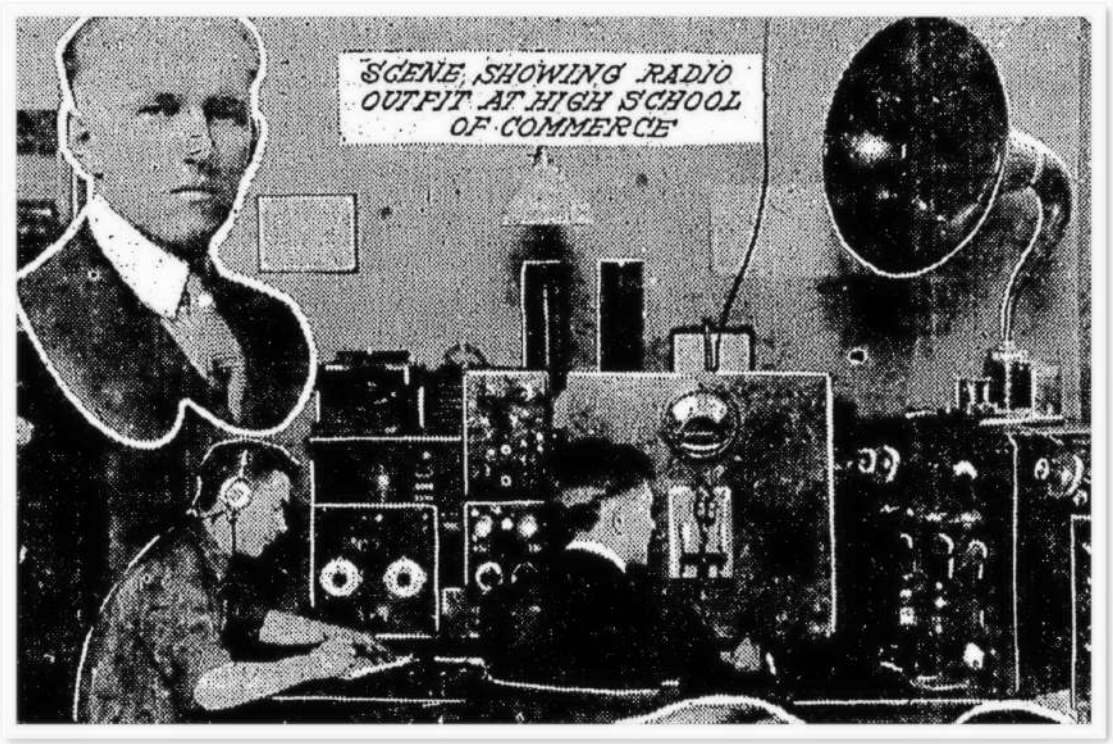
Likely licensed at least by 1920, 17-year-old Ronald Rockwell because of his youth was a late-comer to the wireless party. Amateur licensing began in 1913 and his 9VE call letters were on their second round, having first been assigned to Edwin Littman of Omaha in 1916. But Rockwell's interest in radio ran deep and it was the beginning of a long and successful electronics career.

Rockwell's entertainment broadcasts appear to be the first from Omaha. In 1921 Rockwell was playing phonograph records over the air from his house and receiving reception reports from Kansas City, Wichita, and Lincoln.

As early as summer 1921 Rockwell was broadcasting evening weather reports on 275 meters/1090 kHz delivered by Omaha meteorologist M. V. Robin (*OWH* Oct 13, 1921) followed by a phonograph concert. Rockwell performed a public demonstration of radio at his school's Open House on October 25 (Central High Register, Nov 1, 1921). Much more will be heard from Mr. Rockwell.

9YP Omaha 1920-1923

The Omaha High School of Commerce at 17th and Leavenworth Streets sought to continue training radio operators as it had done during the war. Its station was licensed as 9YP in 1920, but the license was deleted three years later when Technical High School replaced the High School of Commerce and the calls were switched over to that school's new station.



High School of Commerce station 9YP in 1922

Instructor E. R. Anderson and students

(Courtesy Omaha World-Herald)

9YY Lincoln 1920

The University of Nebraska began its wireless experiments in 1899. The Engineering School experimental station had been sending Morse code messages by 1909. As the novelty wore off, the messages began including some useful content with weather and market reports being regularly broadcast by 1916. The station was assigned its 9YY calls in January 1920 (FCC Radio Service Bulletin Feb 1920).

During its first year as 9YY, the station had a regular schedule of market reports and weather forecasts at 10:10 a.m. daily. When in use for two-way communications, the receiving results at the station were reportedly less than desired due to "the low aerial" (*Nebraska Blue Print* vol 20-22, 1920)

The radiophone was added in 1921 with a new transmitter rated at 200 watts, thanks to two graduate students who built it, H. O. Peterson and Allan Weaver. 9YY's broadcasts were on 200 meters as well as the better-performing 375 meters (*LJS* June 11, 1922). (Wesleyan University's 9YD in Lincoln had already experimented with voice transmissions on its station months earlier in October 1920.)

9YY ran a regular schedule starting in July airing phonograph records daily at noon and at 7:30 p.m. No evening hours were regularly scheduled but some phonograph concerts were usually aired evenings once or twice a week.

With the improved signal, reception reports came from five states showing a daytime range of over 300 miles. It was described as the "only high powered phone in this part of the country" (*Radio News*, July 1921, Ziff-Davis Publishing Company). Despite the sometimes noisy summertime reception conditions, 9YY's daily concerts were getting enthusiastic acknowledgments from the six-state region (*The Wireless Age*, Oct 1921).

H. O. Peterson at 9YY
(The Wireless Age, Oct 1921)

Higher power had been tried earlier with a 1000 watt radiotelegraph spark transmitter on 375 meters. The transmitter was built by the University and operated by H. H. Heim, who later used it for the market and weather forecasts in November 1921. He discontinued use of the high power transmitter a month later and switched over to radiotelephone using the existing equipment of 9YY (*Education's Own Stations* by S.E. Frost, Jr.)

One source indicates the first broadcast of a Husker football game was over 9YY in 1921. J.A. Brookes used a phone line from Memorial Stadium sending his play by play to fellow engineering students H.H. Heim and B.E. Ellsworth who in turn translated his descriptions into “the medium of the spark transmitter." (Per 1952 thesis by Robert Earl Lee, noted in *Lincoln Journal Star*, Aug 25, 2002).

In May 1923, 9YY was authorized the higher frequencies above 1350 kHz, the upper limit of the broadcast band at the time in the lower wavelengths of 150 to 220 meters.

By 1924 9YY touted itself as the *Home of the Cornhuskers* on its QSL cards. By then the station was 500 watts with a cage antenna 500 feet long and 75 feet high. Its schedule was 5 to 7 p.m. daily on 172 meters/1743 kHz and 218 meters/1375 kHz. Its receiver for two-way communication was a Grebe CR-9.

The University was also authorized 9XBN for experimental purposes. It was listed as early as 1921 and appeared in the July 1924 Radio Service Bulletin, but it’s use likely was limited to being a classroom tool rather than for communication.

1921 - BROADCASTING BLOSSOMS- THE FIRST STATIONS

The Radio Act of 1912 failed to see broadcasting as a useful offshoot of wireless communication. There was nothing in its regulations dealing with broadcast radio. Adjustments had to be made.

A wavelength for entertainment broadcasting was placed in service, 360 meters/833 kHz, starting in September 1921. A second wavelength of 485 meters/620 kHz was added by December, but those broadcasts were limited to crop and weather reports.

485 meters/620 kHz had a better ground wave coverage than that of the 360 meters/833 kHz entertainment channel. Using the 485 meter wavelength for information indicates that the government viewed entertainment broadcasting as a lesser service.

Broadcast stations were formally recognized. It wouldn’t be long before the Commerce Department’s primary and quite busy duty of licensing ships, government stations and amateurs would be overwhelmed by the explosion of broadcast licenses.

Stimulating the boom of broadcasting was technology. A major receiver improvement was the horn loudspeaker developed in 1921 permitting group and family listening. Before then, a singular headphone earpiece was the only way to listen to electrical audio.

WOU Omaha 1921-1923

Omaha's first station licensed for broadcast was WOU in September 1921. (FCC Radio Service Bulletin January 1922). WOU was put on the air by R. B. Howell, General Manager of M.U.D. (Metropolitan Utilities District) which was Omaha's water and gas company. He was granted a license for WOU on the new broadcast wavelength of 360 meters, happening just weeks before the channel was formally assigned as an entertainment channel.

Mr. Howell's interest in radio began in 1908 as he fought to allow Omaha to buy the then privately owned water plant. In the face of newspaper opposition, he sought a means of publicity outside of the usual resources.

Howell recalled reading about the use of radio-phone in the navy. An inquiry to an old classmate about radio came back with: "Great future, not practical now, as it is little more than a scientific toy." (Why I Believe in Government Radio by Charles E. Duffie, *Popular Science Monthly*, October 1922, pages 65-67, 107)

Howell's interest in radio stayed with him, resulting in his licensing of WOU. His station was authorized experimental work in wireless market reporting, particularly to farmers in rural areas, by also being assigned the 485 meters outlet.

Robert B. Howell

WOU offered grain market quotes along with weather reports four times a day. Carl Hemple, a friend of Ronald Rockwell and a highly competent radio engineer, would become one of the city's first personalities over WOU. By 1922 Hemple would announce news and bedtime stories, concluding the evening with a phonograph concert.

Mr. Howell transferred ownership of WOU over to the Metropolitan Utilities District at 1802 Farnam in March 1922 (*OWH* Sept 12). Operating a station was time consuming and Howell was quite busy with the other demands of his career. Howell was finding time to be a member of Herbert Hoover's 1922 conference concerning broadcast regulation, all the while preparing to run for the U.S. Senate.

Howell went on to become a two-term U.S. Senator. In 1924 he proposed the broadcasting of the Senate's sessions, decades before it became a reality on C-Span.

Not much happened with WOU after the transfer of ownership. The station failed to start a regular schedule. The license was deleted June 23, 1923 due to inactivity and the lack of interest on the part of M.U.D. Though licensed for entertainment broadcasting, M.U.D.'s focus was on the city's water and gas service, not a new-fangled radio station.

As a side note, researchers plumbing the murky depths of radio's sketchy history may come across an Omaha station belonging to R. B. Howell listed as WOV. There is no sign of it in Federal records. This is very likely a typo for WOU, the U misread by typesetters from time to time. The timeline of WOV's alleged existence, wavelength, and address all match that of WOU. Besides appearing in at least three publications from 1921 to 1923, the typo can be found locally in the July 7, 1922, *Omaha World-Herald* where it's indicated as belonging to Howell but with no mention of on-air activity.

9XAA Omaha 1921

9XAA deserves a mention for its interesting efforts in mobile communication and what was perhaps the first ever two-way car radio. 9XAA was an experimental license issued to Wilber Cramer, an amateur operator with the calls 9NG, and Fred Swain. These two ambitious inventors graduated from the Omaha High School of Commerce (FCC Radio Service Bulletin April 1921). They successfully placed a transmitter and receiver in an automobile in 1920 with hopes of marketing such units. The vehicle was quite a sight, with antenna wires strung front to back supported by a towering cross mast rising from the center of the vehicle. (*New Science and Invention in Pictures, Volume 8*, 1920)

WYCG U.S. Army Station, Fort Crook 1921

Though not a broadcasting station, WYCG helps show how radio developed locally as a communication medium in this pivotal era.

WYCG was designed as part of an Army network for official communications with Washington via Fort Sheridan in Chicago. Fort Crook would in turn relay to Fort Douglas, Utah and the Presidio in San Francisco (*Popular Radio Incorporated* 1922 article by Kendall Banning).

The station's birth was announced on August 15, 1920, by the Inspector General of the U.S. Army during a visit to Fort Omaha. He described it as being "the largest radio station between New York and the Pacific coast." But the location was yet undecided between Fort Omaha in North Omaha or Fort Crook about twelve miles south of Omaha.

Licensing began as a Fort Omaha station with the calls WZAG in 1920 (RSB Sept 1920). In June 1921, WZAG was authorized on 1334 meters/225 kHz with an expected range of 250 nautical miles.

As construction commenced came the decision to instead locate the station in Fort Crook switching the calls to WYCG. The station signed on in September 1921 as the War Department's communications station at Fort Crook, the site being the forerunner to today's Offutt Air Force Base south of Omaha (Radio Service Bulletin Oct 1921).

(Other missions at Fort Crook included technical training, and in the mid-1920s the field would become a fueling stop for airmail service into the 1930s. After becoming Offutt field, the Martin Bomber Plant at the site rolled out aircraft during the war in the 1940s. The *Enola Gay* B-29 aircraft that delivered America's first atomic bomb over Japan was built at Offutt.)

WVU Fort Omaha 1922

Fort Omaha added WVU in 1922 after losing out on the big War Department communications contract. WVU did mostly experimental work and was used for Signal Corps training in wireless.

One record indicates WVU was deleted in 1923, though both WUH and WVU are still listed as late as 1930 by the Department of Commerce.

1922 - BROADCASTING IN BLOOM

By 1922 the airwaves (at the time referred to as the "ether") were filling up with a variety of transmissions. Omaha already had about 50 transmitting stations of varying types. Statewide, Nebraska had nearly ten times that number. For about 20 dollars or more anyone could have a receiver set and listen in.

Between the dots and dashes of radiotelegraph stations came voices and melodies from radiophone operators. From its birth two years earlier, broadcasting was now taking hold.

Initial radio programming in the 1920s focused on live music, sports news, market quotations, and instructive lectures. Indeed, the Omaha Radio Association of local radio dealers promoted the programming variety available, saying, "entertaining programs are being received nightly in the hundreds of Omaha homes that are now equipped with radio. Programs from Atlanta, Detroit, Saint Louis, Kansas City, Minneapolis, Denver, and many other points can be heard." (*OWH* Oct 20, 1922)

Omahans could listen to the R. B. Howell station WOU broadcasting its 20 watts from 18th and Farnam Streets. Carl Hemple would read bedtime stories each night to the kids. At 8:30 he delivered twenty minutes of news, followed by weather and market reports, capping the broadcast with a phonograph concert.

Ronald Rockwell, a senior at Central High School and operator of amateur station 9VE, was airing phonograph records from his home at 5019 Capitol Avenue. His requests for listener feedback resulted in mail from all over the U.S.

Omahans with radios were also enjoying educational programs from Wesleyan University 9YD in Lincoln, market quotations four times a day over Omaha's WAAW in the downtown Grain Exchange Building, and phonograph concerts by the Anderson Brothers in Wahoo who were ahead of their time fruitlessly trying to monetize their broadcasts.

In between the local signals at night, listeners could tune some of the 22 major broadcast stations in the U.S. airing everything from sermons and news to organ recitals and grand opera, clearly heard most nights from cities like Pittsburgh, New York, and Chicago. The live music was described as superior to that offered on phonographs, the tones unmarred by scratches and mechanical noise.

Communications from all over the country were occasionally caught by Omaha dial-twisters. One student at Omaha's High School of Commerce reported hearing dispatches between Catalina Island and Long Beach. Listening in on messages was not unusual, as the difference between broadcast and two-way communication hadn't yet been differentiated as separate services. They were mixed together on the band along with the dots and dashes of radiotelegraph.

Growth was skyrocketing. More Omaha and Lincoln stations were on the immediate horizon, most notably the new Technical High School with plans for radio classes, and Fort Omaha upgrading to more powerful equipment for both sending and receiving.

Clutter on the listening band was becoming noticeable. Herbert Hoover who headed the Commerce Department in charge of licensing stations issued warnings about careless interference and hinted at establishing "ether cops" to keep order.

Indeed one Omaha radio individualist that year, John Yeiser, was taken off the air after just weeks of operation when soldiers from Fort Omaha showed up and dismantled his station, WDV. Yeiser was illegally operating off frequency in attempts to find a clear dial position and in doing so was interfering with the Fort's communications.

Radio as a curiosity and plaything was lessening No longer merely a sideline for amateurs and businesses, commercial interest in obtaining commercial licenses exploded in 1922. Soon, stations were piling on the two authorized channels. A third wavelength was assigned in September, 400 meters/750 kHz, to handle the increasing license requests.

A publication called *Radio Broadcasting News* in its September 16, 1922 issue breathlessly called the growing radio listenership "the greatest audience ever known on earth."

With the limited range of primitive receiving equipment, stations at first were reasonably separated geographically on these three channels. But the vacuum tube was a huge advance for receiving as well as transmitting. Receivers were suddenly hundreds, even thousands of times more sensitive. The ability to receive distant signals meant that the multitude of stations jammed on the three authorized wavelengths could be heard interfering with each other, particularly at night when newly-discovered skywave propagation took over and stations from all over the country were skipping in.

It was still a year before the broadcast band of assigned frequencies would be formed. As a prelude, in 1922 all stations of any service were required to conform to new regulations and convert to formal broadcast stations if they wanted to continue broadcasting to the general public. Amateurs, a few of whom like Omaha's Ronald Rockwell developed small followings, were suddenly prohibited from broadcasting entertainment unless their licenses were upgraded.

Though educators and their university stations helped lead the way at radio's beginning, its future was dim. The government stance was that competitive commercial broadcasting would be a better financial foundation to develop radio broadcasting. As a result commercial stations were given favorable assignments and decisions. Schools with their tight budgets dependent upon tuition and contributions were hamstrung in fighting back.

The print media was quickly recognizing and reporting radio's developments, disregarding that it would one day be vying with the new medium for the advertiser's dollar. Weekly schedules of the major nationally heard stations were published in local papers including the *Omaha World-Herald*.

Listed side by side, distant stations listed included KDKA Pittsburgh, WJZ New York, WGY Schenectady, KYW Chicago, and WSB Atlanta, all broadcasting on 360 meters.

Many newspapers went further, running regular columns devoted to the radio listener offering technical tips and printing listener comments along with station listings of the distant signals that were regulars each night. In Omaha, both the *Omaha World-Herald* and the *Omaha Daily News* ran such radio columns, their editors among the first in the nation.

Omaha's William O. Wiseman was the first radio editor for the *Omaha Daily News*. Wiseman joined the newspaper in 1922, editing a weekly radio tabloid as one of his first assignments. It turned out to be a major career move as Wiseman shifted to the new medium, first as a newsman for WOAW, followed by KOIL, then to WOW working his way up to manager for both its AM and TV operations.

At the *Omaha World-Herald,* the radio editor was W. H. Graham, who helped produce the inaugural broadcast of WAAW in 1922.

Already an association of radio equipment vendors and repairman had formed. The Omaha Radio Association consisted of firms such as Western Electric at 9th and Farnam, McGraw Company, 1206 Harney, Peterson Radio, 209 Pearl Council Bluffs, Hemple Electric, 24th and Davenport, and Nebraska Power Company, 15th and Farnam, a total of 19 firms in all.

Omaha was ready to join the over-the-air offerings with its own programming for the city as well as the far reaches of the country. Here are the more notable regional stations that signed on in 1922, just before the advent of the standard broadcast band in 1923:

WDV Omaha 1922-1923

Omaha's second entertainment station was WDV (WOU was the first, in September of the previous year), licensed on March 30, 1922 (FCC Radio Service Bulletin April 1922). It was owned by John O. Yeiser, Jr. who received setup assistance from R. J. Rockwell. WDV broadcast from Yeiser's home at 5021 Cass Street. Though set back from the street, the house to most passers-by was a mysterious network of wires and strange doings.

The single channels dictated by the Commerce Department were often crowded and Mr. Yeiser, a bit of an individualist, sometimes operated slightly above his assigned wavelength 360m/833 kHz in order to be more widely heard. Soon a squad of soldiers showed up to dismantle his equipment because it was interfering with their reception at Fort Omaha.

After being forced off the air for this offense, Yeiser, who was following his father into the legal profession, filed a lawsuit against the government claiming they conspired and obtained a monopoly by preventing individual use of radio stations above 360 meters. Yeiser called his being forced to stay on frequency an abridgment of free speech. He lost, and his license was deleted in February 1923,

Undaunted, Yeiser, along with Ronald Rockwell, went on to assist in putting bigger Omaha stations on the air during the coming months.

WAAW Omaha 1922- KOWH KMEO KCRO

WAAW was the third Omaha station assigned an entertainment frequency license and is Omaha's earliest broadcaster to last into the modern era.

WAAW was founded by the Omaha Grain Exchange primarily as a means of reporting grain prices for farmers and regional grain elevators. It signed on with a gala broadcast from the Grain Exchange Building in downtown Omaha on April 15, 1922. The station will go on to become Top 40 KOWH in the 1950s, and religious broadcaster KCRO in the 1970s. WAAW's story will be told separately.

WIAK South Omaha 1922-1925

In 1922 WIAK was started by the Journal Stockman Company. It commenced airing market reports from South Omaha on July 27 at 7:45 a.m. using 250 watts on 360/485 meters (*OWH*) (FCC Radio Service Bulletin Aug 1922 lists 200 watts). The station was moved to 1080 kHz with 250 watts in May 1924.

South Omaha was a separate community centered around its regional stockyards and meat packing industry. It had been annexed by Omaha in 1915. The South Omaha business district was along South 24th Street, primarily between L and Q Streets, just to the east of the stockyards and packing plants.

WIAK lasted only a few years, the license deleted July 1925. The station was dismantled and surrendered its license that year after reaching an agreement with new commercial station WOAW to take over the market report services. A contributing factor may be that WAAW and KDEF by this time were on the air reporting markets as well.

WNAL Omaha 1922-1928

18-year-old Ronald Rockwell licensed WNAL as an outgrowth of his amateur license 9VE. His new license was authorized the entertainment channel of 360 meters/833 kHz in late summer 1922 (RSB Sept 1922). Despite not being Omaha's first entertainment licensee, Rockwell's station was perceived and regarded as the city's first broadcaster by virtue of its continuance of programming from his amateur station. Indeed, WNAL during its run would adopt the slogan, *The Pioneer Station of Omaha*.

By this time Rockwell was a student at Iowa Statue University in Ames and his return visits weren't enough to allow day to day operation of WNAL. He also became involved in assisting with the construction of another Omaha station, Woodmen of the World's WOAW, in 1923. Rockwell almost immediately upon WNAL's licensing rented his station to the *Omaha Daily News* which operated the station for one year, presumably for news purposes.

At the *Omaha Daily News*, WNAL was run by sports editor Gene Rouse (birth name Hollis E. Rouse). When he was relieved of his editing position at the newspaper to run the radio station it seemed like a banishment. Rouse then applied the old "lemonade from lemons" adage. It was his first job in radio and quickly became his career. Rouse went on to WOAW Omaha when it signed on in 1923. He quickly became a popular announcer and after one year Rouse ranked 14th in a national *Radio Digest* poll. By 1931 Rouse was a network announcer for NBC in Chicago.

After a year on the crowded dial position of 833 kHz, WNAL was authorized 20 watts on 1240 kHz on the newly-formed broadcast band (RSB Sept 1923). More dial-hopping followed in 1924, going to 1130 kHz with 20 watts in January, then to 1160 in July 1925 when control was shifted to Central High School. Control of WNAL came back to the busy Rockwell in 1926 (RSB Sept 1926).

When the Federal Radio Commission was established in 1927, WNAL 1160 was permitted 250 watts but forced to divide time with two high school stations, KOCH at Central High and KFOX at Technical High (RSB May 1927).

WNAL went silent later in 1927 when Rockwell permanently left the state for work that soon led him to a career at Crosley Broadcasting in Cincinnati. WNAL's license was deleted in September 1928 as part of the winnowing out process begun by the new Federal Radio Commission. KOCH and KFOX suffered the same fate.

Ronald Rockwell joined the Crosley Corporation in 1929 becoming technical supervisor there in 1936. At Crosley, he famously pioneered in electronic circuitry and high power broadcasting.

WPAF Council Bluffs 1922-1923

In Council Bluffs, Iowa, WPAF on 360 meters/ 833 kHz was licensed in October 1922 (Radio Service Bulletin Nov 1922). Operated by Peterson Radio Co. at 213 South Main Street (and/or 209 Pearl Street, the around-the-corner address of the same building), owner Marcus Peterson built the station to promote sales of radios, radio kits, and radio parts at his store. He built a studio and aired programs on a non-regular basis that were heard from Philadelphia to Los Angeles. His station slogan was *Where People Are Friendly* (*OWH* Feb 4, 1923).

The station was known to be airing music during the threatened ASCAP lawsuits of May 1923 but was gone by year's end when the license was deleted after one year. Despite the popularity of selling radios from crystal sets to tube sets, Peterson Radio went bankrupt in June 1924.

WCAJ Lincoln 1922-1933

Dr. John Jensen's WCAJ at Wesleyan claimed to be the first radio station in the state to broadcast both voice and music. WCAJ, which also broadcast Jensen's physics lectures, is often noted as being one of the earliest, if not the first, educational radio stations. Unfortunately, after the first two years WCAJ entered a difficult period that ended in the early 1930s.

WCAJ was added to Nebraska Wesleyan University's experimental station 9YD on May 6, 1922. It was authorized 833 meters with 20 watts, increasing to 500 watts the following year (May 1923) when the experimental 9YD license was deleted.

WCAJ's problems began with a punishing series of dial position moves in 1924. That July WCAJ was moved from 833 kHz to 1060 kHz, then in October to 1070 kHz.

In 1925 the moves continued, to WFAV's 1090 kHz in January then 1180 kHz in April. WCAJ stayed on 1180 while over a dozen other stations piled on its frequency during the breakdown of regulation in 1926.

After the Federal Radio Commission was formed taking control of the airwaves, WCAJ was moved to 860 kHz in March 1927 where it encountered interference from KVOO in Bristow, Oklahoma.

The station was shifted to 790 kHz in June (RSB July 1927) and ordered to share time with KMMJ Clay Center, Nebraska. When nighttime interference from WGY created a nearly unlistenable situation, WCAJ was ordered in November to operate during daylight hours only resulting in the cancellation of two evening study courses.

An equipment upgrade was completed in 1928 and the station was moved once again in October, this time to 590 kHz, a channel occupied by Omaha's commercial station WOW. WCAJ was forced to share air time with WOW, getting only 1/7, three hours, of the broadcast day.

WCAJ had already lost much support after being kicked around to so many unsatisfactory frequencies. Along with costly litigation defending itself from WOW's efforts to get the 590 frequency to itself, the under-funded educational broadcaster sold out to WOW in July 1933. The WCAJ calls were deleted on August 1, that year.

WFAV Lincoln 1922-1927

Nebraska University's Electrical Engineering School in Lincoln got its second station in mid-1922 (FCC Radio Service Bulletin July 1922). It was WFAV, with its standard broadcast license joining its experimental station 9YY.

Operating on 360/485 meters, the station aired local weather and Omaha market reports plus grain reports for Chicago, Omaha, and Kansas City.

It was moved to the new broadcast band with 500 watts on 1000 kHz in October 1923, then shifted to 1090 with 250 watts in early 1924 sharing time with WCAJ. Programming expanded to daily talks, news items, and government health bulletins that year.

Despite being an educational station with a dim future, WFAV pioneered educational broadcasts in Nebraska during its short five-year run. It offered faculty talks and music along with credit courses over the radio for $12.50 per student which included the book, exam, and two credits.

In 1925 the University of Nebraska reached an agreement with KFAB Lincoln to use that station's facilities for instructional programming leaving the university station WFAV to air only "supplemental" programming. A studio was added to the Administration Building and phone lines were run to KFAB.

The station increased power to 500 watts in early 1927 (RSB Jan 1927) but was doomed when CBS programs began crowding out instructional programming on KFAB. The University station finally ended its broadcasts in March when its only remaining program was a weekly musical program on Fridays at midnight.

No attempt was made at license renewal time and it was deleted March 30 (RSB April 1927). Two years later the University resorted to producing transcriptions for airing on smaller stations.

In decades to come, The University of Nebraska will establish its own statewide radio and TV network, one of the best equipped in the country.

WJAG Norfolk 1922-

Though 90 miles outside the Omaha region, WJAG signing on in September 1922 is notable for becoming Northeast Nebraska's most successful pioneer broadcaster, even though nearby Wayne State College irregularly aired music programs just months earlier.

WJAG was founded by Gene Huse, publisher of the *Norfolk Daily News*. The newspaper's city editor, Karl Stefan, anchored the station's first news report and served as chief announcer until his election to Congress in 1935.

The station's initial power was 100 watts and its first broadcasts consisted of three afternoon news and market reports at 12:15, 3:30 and 5:30. Early programming after that consisted of performances by community choral groups, barbershop quartets, and polka bands.

WJAG's first studio was a single room in the newspaper building. It was later housed from 1926 to 1944 in the Hotel Norfolk at 108 North Fourth Street.

WJAG would later become a factor in getting KFAB moved to Omaha from Lincoln with a power increase to 50-thousand watts.

WPAA Wahoo 1922-1923

35 miles west of Omaha, WPAA received its license in mid-1922 (FCC Radio Service Bulletin Nov 1922). It's notable because the owners, Anderson & Webster Electrical Company, attempted a regular schedule on 700 kHz offering phonograph concerts and talks from Wesleyan University.

Mr. Anderson was ahead of his time. He tried to monetize his broadcasts but couldn't get community donations or even a bank loan during this time when the commercial effectiveness of broadcasting was yet unproven. WPAA's license was deleted in June 1923.

WRAR David City 1922-1923

WRAR signed on early in the year and operated on 1330 kHz. The owner was Jacob Carl Thomas who ran J. C. Thomas Radio & Sound Equipment at 361 Fourth Street in David City (FCC Radio Service Bulletin November 1922). Thomas was one of many who briefly held a broadcast license and operated a station as a device to demonstrate and sell radio receivers.

Lasting less than a year, the WRAR license was deleted in September 1923. David City would get another licensee the following year, a station that would eventually move to Lincoln, about 40 miles southeast of David City. It would soon become KFOR, a long-time broadcaster in that market.

WOAE Fremont, Nebraska 1922-1925

Midland College in Fremont made a half-hearted attempt at running an educational station. After receiving some donated radio equipment, WOAE was licensed on September 22, 1922 on 360m/833 kHz with 100 watts. Three months later power was reduced to 20 watts. WOAE was moved to 1070 kHz with only 15 watts in June 1923.

The station was operated by a student at the College. He presented addresses by professors and music by members of the music department. After his graduation, the College had difficulty finding anyone able to properly operate the station. Maintaining WOAE became difficult and the license was allowed to expire, deleted in January 1924 (*Education's Own Stations* by S.E. Frost, Jr.).

WGAJ Shenandoah, Iowa 1922-1923

Before the historic Shenandoah stations KFNF and KMA reached the air, WGAJ was licensed as Shenandoah's first station. Per FRC records, WGAJ signed on in June, belonging to W. Harlan Gass, licensed for both 360 meters and 485 meters. Using 100 watts, Gass operated from his parent's home at 413 7th Avenue. The young enthusiast played music and recited poetry at irregular intervals.

With so few radio receivers, he reached the public by stringing an antenna wire inside the Empress Theater in downtown Shenandoah and hooking it to a receiver equipped with loudspeakers. The curious went to the theater at scheduled times to hear Harlan broadcast from his house some blocks away (*KMA The First 60 Years* by Robert Birkby).

WGAJ's license was deleted May 21, 1923 just months before Henry Field started his travels to WOAW Omaha discovering the power of radio. The commercial broadcasters in Shenandoah soon followed: Field's KFNF in 1924 and Earl May's KMA in 1925.

OTHER REGIONAL LICENSEES

Other stations licensed in the region during this pivotal year of 1922 were mostly in Lincoln. They were licensed perhaps out of curiosity or with half-formed ideas as the new medium was being explored, but all were short-lived, many likely never even reaching the air. They are listed here primarily as a matter of record.

WJAB Lincoln 1922-1925

The American Radio Company licensed WJAB in July (FCC Radio Service Bulletin Aug 1922). It was authorized 360 meters/833 kHz. The company name was changed to American Electric Company the following year (RSB Apr 1923). In May 1924 it was reassigned on the new broadcast band to 1310 kHz with 100watts. Its license was deleted in February 1925.

WGAT Lincoln 1922-1923

WGAT was licensed by the American Legion Department of Nebraska on June 26, 1922, assigned to 360 and 314 meters. The named operator was Richard Block, an officer in the Lincoln American Legion at 11th and O Streets. WGAT claimed to be Lincoln's second station after WCAJ, but didn't last. The license was deleted on April 9, 1923.

WKAC Lincoln 1922-1923

Lincoln's third station to join the local fray on 360 meters during the summer of 1922 was WKAC, put on by Star Publishing (FCC Radio Service Bulletin Aug 1922). It was reassigned to 1090 in May 1923 and was deleted the following September.

WIAX Lincoln 1922-1923

The Capitol Radio Company joined Lincoln's broadcast dial in July 1922 with WIAX on 360 meters/833 kHz (FCC Radio Service Bulletin Aug 1922). It lasted less than a year, the license deleted in February 1923.

WLAF Lincoln 1922-1923

Yet another Lincoln station to share time on 360 meters appeared in August 1922. It was WLAF, licensed to Johnson Radio Company (FCC Radio Service Bulletin Sept 1922). The license was deleted in February 1923.

WMAH Lincoln 1922-1925

General Supply Company licensed WMAH in August 1922 (FCC Radio Service Bulletin Sept 1922). It was reassigned to 1180 with 100 watts on the new broadcast band in May 1923 with power increased to 500 watts in February 1924 but reduced back to 100 watts in May. The station lasted to March 1925.

WTAU Tecumseh 1922-1925

About 65 miles south of Omaha, Tecumseh briefly had a station when Ruegg Battery & Electric licensed WTAU in November 1922 (Radio Service Bulletin Dec 1922). Starting out at 833 meters, the station's 10 watts was moved to 1240 kHz in 1924, and gone by June the following year (RSB July 1925).

WSAS Lincoln 1922-1923

The State of Nebraska station WSAS was licensed in September 1922. It was to be run by the Nebraska Department of Agriculture (FCC Radio Service Bulletin Nov 1922). WSAS was given the 360 meter and 485 meter wavelengths with 250 watts presumably for farm reporting, but was gone just months later, deleted in April 1923.

KFDU Lincoln 1923-1924

Another short-lived station for Lincoln was KFDU, licensed to Nebraska Radio Electric Co. in May 1923 on 1250 kHz. Its license was deleted in January 1924.

1923 - THE AM BROADCAST BAND IS FORMED

Changes were fast-moving and 1923 was another busy year. First, the concept of identifying the dial position by wavelength was changed by the Bureau of Navigation to the more refined and exact frequency of the station, measured in kilocycles per second. This method of identifying a station’s dial position remains today, though the term is now kiloHertz.

Secondly, an overhaul of the radio spectrum usage on May 15, 1923 originated the AM Broadcast Band to an early version of how it appears today. On the new band, stations are spread out, assigned in 10 kHz increments between 550 and 1350 kHz. The higher end of the band was less popular among broadcasters because ground wave distance diminishes as frequency increases.

The variety of programming offered by this time was all presented live, the scratchy phonograph records of earlier years all but outlawed. Record companies and music unions feared diluted sales would result from their works being broadcast.

Air schedules had to be filled with live performances, and almost anything would do: Poetry readings, lectures, music ranging from pianists to vocalists, anyone who could perform was welcomed into the studio and placed in front of a mic. Tuning around for the variety of live bands and orchestras skipping in from distant ballrooms late at night kept late night listeners entertained.

All the while,, more new stations were signing on in the region, further establishing a firm foothold for radio broadcasting.

WOAW WOW Omaha 1923- KOMJ KXSP

Woodmen of the World Insurance company had foresight. The company began planning a new radio station as early as 1919.

The company also had the money and went first class all the way, starting with adding a 19th floor for housing the studios and transmitter to the top of the Woodmen of the World building, the tallest between Chicago and San Francisco. A pair of towers was soon added to to the skyline atop the building to support the antenna.

WOAW signed on from the top of its downtown Omaha building on April 2, 1923. It was the first Omaha station to use a dial position on the newly-designated AM radio band, receiving a choice low frequency of 570 kHz.

The station would later get its coveted WOW call letters in 1926 and continue broadcasting into the next millennium. It's one of Omaha's four major pioneer stations with a story of its own in chapter two.

KFFX Omaha 1923-1925

McGraw Electric at 1208 Harney Street operated KFFX on an intermittent basis starting in early 1923 (RSB April 1923). Initially assigned the entertainment frequency of 360 meters/833 kHz, the station was moved just weeks later to 1080 kHz on the newly-formed AM broadcast band with 250 watts (Radio Service Bulletin May 1923), but power was reduced to 100w that fall (RSB Dec 1923).

It's presumed McGraw's interest in putting a station on the air was to sell radios. With no regular programming schedule, the only known reports of the station operation were from the *World-Herald* Building Show happening at about the same time as the station first signed on (*OWH* April 5, 1923). Described as *The McGraw station,* it carried afternoon and evening music shows from the goings-on at the City Auditorium. It's notable that these broadcasts were rivaled by Woodmen's new station WOAW debuting at the same time.

It's possible McGraw sought the radio license solely for that promotion at the Builders Show. KFFX was short-lived, the license deleted just months later in August 1923 (RSB Sept 1924).

McGraw Electric was well-versed in transmitters, however. It was later contracted to install a transmitter in a boxcar for Union Pacific's portable station in 1925, possibly using equipment and parts leftover from the defunct KFFX.

KFLZ KICK Atlantic, Anita, and Red Oak, Iowa 1923-1933

This station's license moved around within Iowa, a lot. It will become even more notable in the 1930s when its travels wind up in Davenport on the far eastern side of the state after spending a year in the Omaha market, licensed to Carter Lake.

Starting out about 60 miles east of Omaha as Atlantic's first station, KFLZ was authorized in November 1923 with 10 watts on 1100 kHz (RSB Dec 1923). The station was an educational broadcaster, licensed to the Atlantic Automobile School. The business plan was to broadcast weather, crop reports, and other news of rural interest to farmers (*Education's Own Stations* by S. E. Frost, Jr.)

Power was upped to 100 watts in February 1924 and the call letters were changed to KICK in October.

KICK moved around starting in 1926. The station first moved 14 miles east to Anita, Iowa (RSB Jan 1926). The following year the dial position was shown as 650 kHz (RSB May 1927).

KICK was to move back to Atlantic in August but the destination was changed to Red Oak, about 30 miles south of Atlantic the following month. The station was assigned 930 kHz to share time with WIAS Ottumwa (RSB Sept and Oct 1927). The new owners were the Red Oak Radio Corp. of America.

Red Oak Radio was owned by Roy W. Anderson, manager for the Standard Bridge company of Omaha. He set the station up in the east wing of the Hotel Johnson at 601 Sunset Road in Red Oak. The antenna was strung between a new tower on the hotel roof to the dome of the courthouse across the street (*OWH* Oct 9, 1927).

KICK was slated for elimination in the 1928 FRC move to cut back stations deemed less than necessary but management appealed and won, the station remaining on the air. It was moved to 1420 kHz with 100 watts that fall.

From there, KICK became an Omaha story. It moved to the Omaha market in 1933, licensed to Carter Lake, Iowa, but remained for only a year. From here, KICK's story is explored in detail in chapter three.

1924 - THE AM BROADCAST BAND IS EXTENDED

The Broadcast Band was extended to 1500 kHz in 1924. Amateurs were then relegated to frequencies above that, but their usefulness prevailed. They were discovering that the high-frequency characteristics of short wave allowed very long distance communication. The work done by amateurs was on their own time and at their own expense. This later earned them specific bands of their own on the radio spectrum that's valid to the present day.

A November radio exhibition sponsored at City Auditorium in Omaha showed off a variety of 1924 receivers, from crystal sets to superheterodynes, in various styles from table tops with outboard speaker horns to consoles with spindly legs supporting wood cabinetry that housed built-in speakers. Most radios were priced in the area of 20 dollars, though many sets were finished in elaborate cabinetry and cost considerably more.

A feature of the exhibition was a radio receiver identical to that used by Captain Donald McMillen and his crew aboard their schooner the *Bowdoin* on his recent North Pole expedition (*OWH* Oct 9, 1924).

Of particular interest was a Westinghouse receiving set on display at the McGraw Electric booth. Not manufactured for public sale, the set was a duplicate of the one being used in Hastings, Nebraska to pick up the signals from KDKA Pittsburgh for re-broadcast on KFKX 1050 kHz in Hastings and to the world from Central Nebraska on KFKX's experimental shortwave outlet 9XW (*OWH* Oct 14, 1924). Westinghouse built the stations to determine the usefulness of shortwave. Though successful, KFKX and 9XW were shut down after NBC arrived on the stations in 1927.

KFKX's EKKO Verification stamp for DXers.

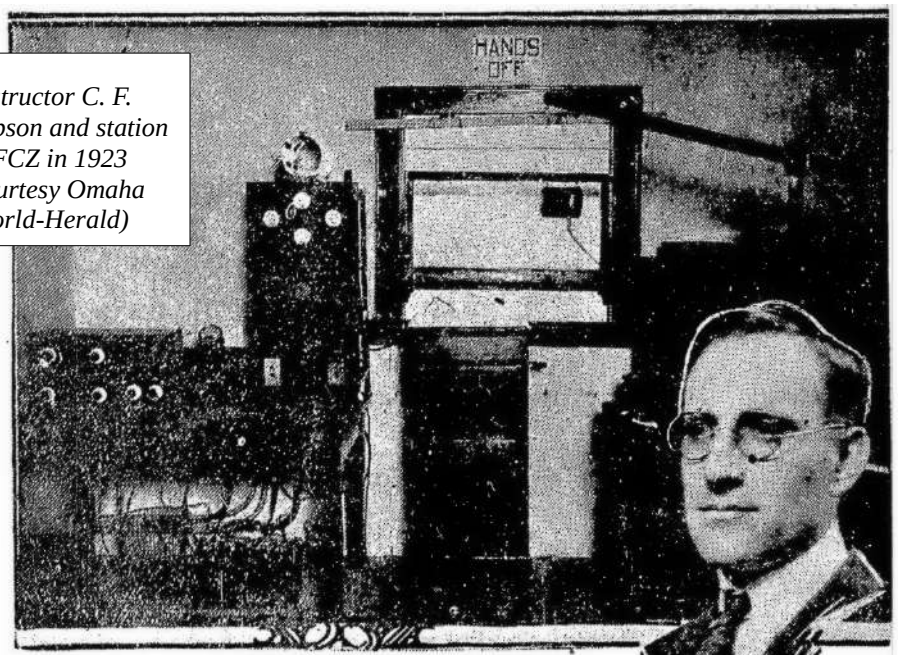
More new stations this year included two from Omaha's high schools and one from Lincoln that was destined to become an Omaha powerhouse. It was also the year for the first of the two Shenandoah seed and nursery stations.

KFCZ, KOCH Omaha 1924-1928

Central High School is in downtown Omaha at 20th and Dodge Streets on Capitol Hill, a high point in Omaha that was the site of the Nebraska Territorial Capitol for ten years until 1867. The school already had an experimental license 9XAR which was the first in the state according to school instructor C. H. Thompson. It permitted operation on all wavelengths with no restriction of hours. A separate broadcast license of KFCZ was granted in January 1923. 9XAR was deleted in late 1926.

It was well over a year before KFCZ reached the air. The radio class students busily raised money for the equipment in the interim while Thompson constructed the broadcast transmitter assisted by “local radio expert Ronald Rockwell.” Thompson planned a T-type cage antenna 120 feet long to broadcast both code and voice, and a receiving set to allow the operation to be two-way.

KFCZ was authorized 300 watts on 360 meters (RSB March 1923). As sign on time approached, Thompson noted the transmitter was using a 50-watt tube, but a 1000 watt tube was "on the way" and would be installed upon its arrival (*OWH* Mar 22, 1924).



Instructor C. F. Thompson and station KFCZ in 1923 (Courtesy Omaha World-Herald)

Described as Omaha’s third station, KFCZ debuted with a test program on Thursday, March 20, 1924. The high school orchestra and various vocalists performed.

KFCZ's first formal program aired from 7:30 to 9 p.m.. on March 27, 1924. School principal J. G. Masters opened the broadcast and was followed by an orchestra called "The Omahans," violin solos, and a vocalist. The signals were reported in Wisconsin and Texas.

The station was used for regular class work. The Central High School Radio Club was organized to present programs of music, readings, plays, and Monday evening lectures.

Remote lines were set up to the Rialto Theater at 14th and Douglas Streets for broadcasting pipe organ music in September, and to the Schmoller and Muller Piano Company for daily programs of music. The club soon presented shows during the school day and special events on the weekends

Power was decreased to 50 watts in May 1924 (RSB May 1924). The calls were changed to KOCH, *Know Omaha Central High*, in April 1925.

Authorizations for power increases followed, to 100 watts in July and 250 watts in October (RSB Nov 1925). Along with the July power increase, the station was moved to 1160 kHz. Reports from listeners were received from as far away as both coasts, Canada and Mexico

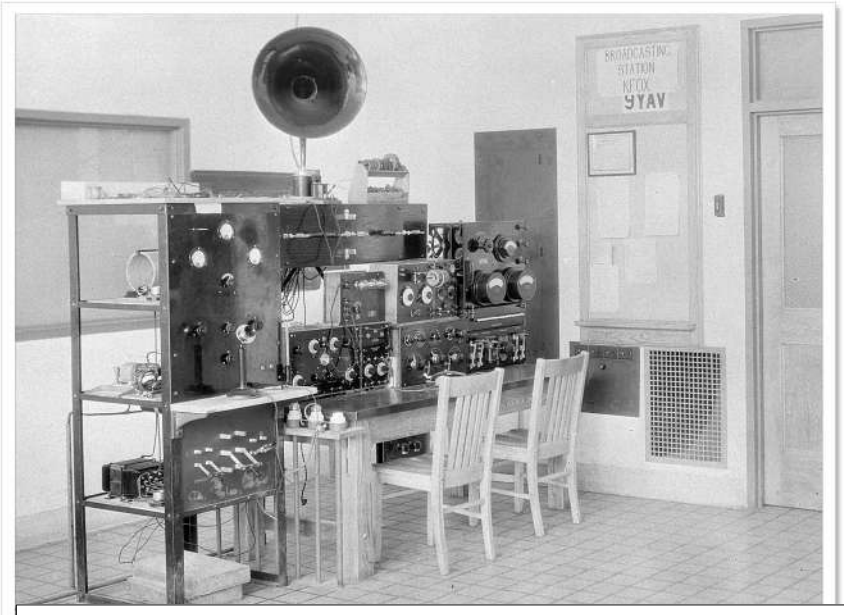
The highest power increase was for 500 watts in November 1926, but the following year the station was reduced to 250 watts and ordered to share time with Ronald Rockwell's WNAL and Technical High School's KFOX (June 1927).

A short time later a dispute over KOCH ownership surfaced. In early 1928 competing applications for KOCH licensing were filed--one by C. H. Thomson for the Central Radio School, already named licensee in April 1927, and the other by J. G. Masters, principal of the school. Masters claimed the license belonged to the school in his name. (*Education's Own Stations* by S .E. Frost Jr.)

The controversy soon ended with no winner. The Federal Radio Commission was deleting high school licenses in an effort to thin out stations on the increasingly crowded AM band and KOCH was one of them, gone on July 18, 1928.

KFOX Omaha 1924-1928

Omaha Technical High School on the northwest edge of downtown Omaha at 3215 Cuming Street had just opened when gaining experimental license 9YP in early 1923 (Radio Service Bulletin January and March 1923). Those calls were switched over from the Omaha High School of Commerce (RSB January 1923) which had been officially replaced by Tech High. The School of Commerce license was formally deleted later in the year (RSB Oct 1923).



1924 photo of Technical High School's KFOX
(© Durham Museum)

Tech was authorized experimental license 9YAV along with a broadcast license KFOX in March 1924 (RSB April 1924).

The broadcast license was for 100 watts on 248 meters/1210 kHz. The station was used for technical training and broadcasting, airing lectures, debates, and recorded music along with some programs by the high school orchestra and glee club.

KFOX was noted for having frequent technical problems, receiving lots of interference complaints from listeners about buzz and splatter during its first couple of years.

Orville Weimer, later an announcer for WAAW and KOWH, got his radio training at KFOX. He recalled broadcasting on KFOX, "a hit or miss sort of an experiment by students, mostly playing phonograph records and putting the microphone in front of the Victrola." (*OWH* May 27, 1984).

KFOX was moved to 1160 kHz in June 1927, forced to share time on the channel with Central High School's KOCH and Ronald Rockwell's WNAL (RSB May 1927).

KFOX was silenced the following year as part of the Federal Radio Commission's efforts to weed out stations that couldn't prove their need in the "public interest, convenience, and necessity." Despite protests by the school, the license renewal was denied on July 25, 1928 (*Education's Own Stations* by J.E. Frost).

KFAB Lincoln 1924-1947

Omaha's heritage station started out in Lincoln in 1924. KFAB was owned by the Nebraska Buick Auto Company and signed on December 4 from its showroom in the Buick Building at 13th and Q Streets. KFAB started out at 1250 kHz and moved to 880 kHz in 1925. The station's chief announcer, Gayle Grubb, soon developed a following as "Gloomy Gus."

Management went into a partnership with the University of Nebraska and the school would broadcast daily programs from studios on campus. Professor T. A. Blair, meteorologist and director of the US Weather Bureau, quickly gained a following on KFAB as a personable radio weatherman. Blair gave daily weather conditions and forecasts while other stations merely announced weather conditions.

Nebraska Buick letterhead noting radio distribution along with automotive equipment.

Husker football began airing in 1926 as KFAB continued to grow. Power was increased and a new transmitter site rose at 13th and Holdrege Streets near the state fairgrounds.

After the Federal Radio Commission took control in 1927, KFAB was moved to 970, 940 and finally 770 kHz by the end of the 1920s. The station's story continues into the 1930s pioneering synchronous broadcasting with a Chicago station, and in 1947 moved to Omaha with 50 thousand watts to become the market's heritage station.

KFAB's story is detailed in chapter two, *The First Stations*.

KFOR David City 1924-1927

After the short run by WRAR in David City, a second station from this small town took to the air. The David City Tire and Electric Company at 343 North 9th Street started up KFOR in February 1924 with 10 watts on 1330 kHz. Power was increased to 20 watts the following June.

David Shuman was added as a partner in September 1924. Shuman was an accomplished engineer, having built his first transmitter in 1914.

He later sought upgrades for KFOR, getting 100 watts authorized in June 1925, and moving the station to Lincoln in 1927.

KFOR calls still displayed on tiled facade, North 9th Street in David City.

KFNF Shenandoah, Iowa 1924- KYFR

The first of two Shenandoah broadcasters, both owned by seed companies, signed on in February 1924. Henry Field discovered the power of radio while doing shows from Omaha's WOAW. He soon built his own station, signing on KFNF with 500 watts on 1130 kHz.

Aiming at the rural audience, KFNF's slogan was *The Friendly Station*. Field's friendly on-air demeanor in offering horticulture and crop-growing tips attracted a nationwide audience. Field's seed company developed a huge mail-order business through his seed catalog, sending one to all listeners who wrote in for any reason.

A competing seed company run by Earl May signed on the following year. May's KMA along with KFNF went on to make radio history from this small Southwest Iowa town. The Shenandoah stations are detailed in separate segments at the end of the second and third chapters

1925 - THE PUSH FOR COMMERCIALISM STRENGTHENS

By 1925 radio's novelty evolved into a lifestyle. The initial fascination of hearing voices and music from hundreds of miles distant gave way to more practical characteristics like audio quality and cabinet design. A radio retailing survey showed that the number one sought-after factor for radio listeners was no longer DX (distance) as it had been for the past several years, but was now tonal quality. Following that, qualities sought were selectivity (separating stations from interfering with each other), appearance, price, then distance.

The print medium was tying in with the mania. Besides radio columns and program listings, some publishers offered premiums. The *Norfolk Daily News* in Northeast Nebraska promoted free radio sets to clubs and organizations. The *Omaha Daily News* in 1925 offered free two-tube Radiola receivers with headphones to out-of-town subscribers who would join the P. R. Helm Radio Club and promote the newspaper. (The *Omaha Daily News* 1899-1927 merged a short time later with *The Omaha Bee.*)

The licensing frenzy shifted to the more serious as broadcasting took root. Station owners and managers turned to seeking upgrades and ways to monetize this new medium. The curious who were obtaining licenses as a plaything or with half-baked ideas grew fewer.

In less than a decade broadcasting became the rage of the Roaring Twenties along with the Charleston dance and the development of air travel. Radio was established as an entertainment and information medium, but who would pay the bills for this? Certainly not the listener, who already put money into the radio set and its batteries.

Commercialization of radio began cautiously. The new radio audience latched on to the free entertainment, but any commercialization more blatant than sponsor names that were connected with talent or call letters annoyed listeners and initially was frowned upon by the government.

The actual buying of radio time first took place in 1922 when a real estate agent offered money to New York's WEAF to promote the Long Island suburb of Jackson Heights. But that was years before direct advertising would become acceptable.

Unsure of how to make money, broadcasters found oblique ways to pay the bills, like including sponsor products in the names of singing groups and offering freebies over the air in an effort to interact with listeners.

Secretary of Commerce Herbert Hoover in 1924 feared this indirect advertising would become more direct and squeeze out useful radio content. Addressing a conference in Washington, Hoover said the quickest way to kill broadcasting would be to use it for advertising, noting, “The reader of the newspaper has an option whether he will read an ad or not.”

The government had kept a hands-off policy on the issue but began taking sides in 1927 when the Federal Radio Commission was formed to replace Hoover’s Department of Commerce in controlling and structuring the burgeoning broadcast business. The FRC concluded that advertising was the only way to support the development of the broadcast band.

But, the government introduced a note of caution in its taking sides on the commercialization issue. In a 1927 dedication ceremony speech, H. A. Bellows of the newly-formed National Radio Commission said the radio commissioners will not tell radio stations whether or not they should advertise products over the air. He went on to say it’s up to the listeners to tell the stations what they want.

Before the government’s new hands-off stance, a station’s perceived goal was simply to broadcast to the public as a service of its owners, although raising awareness of an owner’s product may have been the underlying intention. By the end of the 1920s, almost 90% of all the radio stations in the country were broadcasting commercials, many generating enough revenue to support operational costs with perhaps a profit.

From this point, the seeds for commercials as an irritant and for cookie-cutter programming was planted. Presaging modern day complaints about the sameness of radio programming, the Father of Broadcasting, Lee DeForest, in 1938 complained, “there are too many stations doing the same things.” DeForest saved his fiercest comment for commercial interruptions, calling them maddening. This was just 13 years after his proud sign-on dedication note to KOIL.

But before commercials were OK’ed, new stations continued to sign on, no longer with the hesitant “let’s get a license and see where this goes” manner of so many earlier licensees, but now with a clear plan to broadcast entertainment and information and making money along the way. This was especially evident with the sign-on of KOIL Council Bluffs for the purpose of selling motor oil.

KOIL Council Bluffs, Iowa 1925-1936

It was an oil company visionary who put KOIL on the air. Don Searle of Mona Oil recognized the power of the new medium. With the financial clout of his father's oil company, he built KOIL and wound up launching a new career for himself. Searle would stay in radio, never looking back at the family's lucrative oil business he left behind.

The station was licensed to Monarch Manufacturing and given 500 watts on 1080 kHz, broadcasting from studios in a building constructed specifically and solely for broadcasting.

KOIL (the K-Oil calls selected for Monarch's product) signed on from the hills overlooking Council Bluffs on July 12, 1925.

The station joined the wave-jumping spree of 1926 moving to 980 kHz but was reined in the following year and sent back to 1080.

In 1927 KOIL aired the debut broadcast of the Columbia Broadcasting System on September 18 to become Omaha's second network affiliate. WOW had just joined NBC Red and Blue two weeks earlier on September 4th.

By the end of the year, KOIL was moved again, to 940 kHz, where it was forced to share time with Lincoln's KFAB.

In 1928 KOIL built a remote studio in Omaha at the Fontenelle Hotel, 18th and Douglas. The station's story continues from there, becoming a successful network outlet and even producing radio programs for national networks during radio's Golden Age. KOIL's story is covered in detail in chapter two.

KMA Shenandoah, Iowa 1925-

With Henry Field's KFNF success at the Field's Nursery and Seed Company, competitor Earl May built his own station to promote his own seed company. It began after numerous trips from Shenandoah to WOAW in Omaha to reach the radio audience. Soon, May built a studio in his nursery's office building and had a phone line to Omaha installed so that he could eliminate the travel. But noting the success of Henry Field's KFNF, May finally set out to build his own station.

KMA's launch September 1, 1925 was on 1190 kHz with 500 watts, and like KFNF its programming was directed to the rural audience.

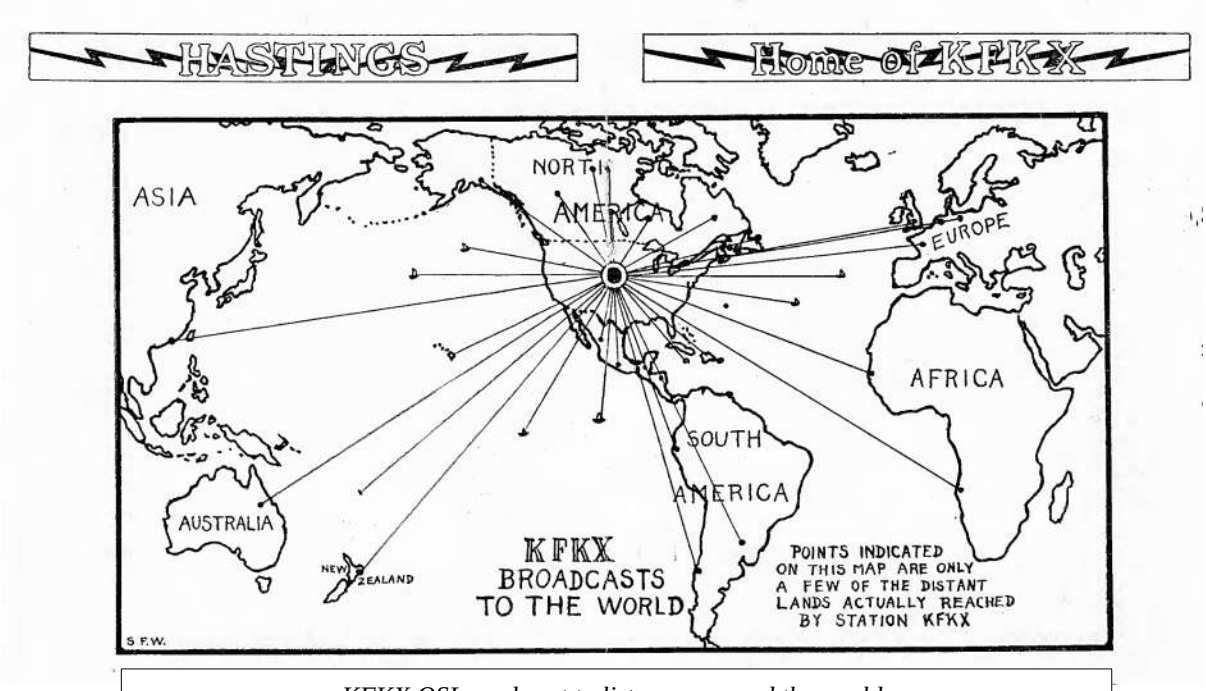
Both stations developed a popular following on a national scale. Seed catalogs were sent to listeners who wrote in, leading to a mail-order business that soon went beyond just agricultural products.

These two cash cows of the 1920s are stories of their own, detailed at the end of chapters two and three. While KFNF eventually withered and sold out to a religious organization in later years, KMA went on to become a dominant rural voice of Southwest Iowa, its ownership kept in the same family for 96 years.

CLOSE-UPS and TECHNICAL

KFKX and 9XW- INTERNATIONAL SHORTWAVE FROM NEBRASKA

Though some 130 miles west of Omaha, a short-lived station in Hastings deserves a mention for its being the first international broadcaster in the U.S. The Westinghouse Corporation in East Pittsburgh came to town in 1923 seeking a central U.S. location for a shortwave operation. Frank Conrad, chief engineer for Westinghouse Electrical and Manufacturing, had taken an early interest in shortwave and was looking for a way to use it for relaying programs without having to use the costly lines of AT&T. Conrad had been airing KDKA on shortwave over his ham station during tests as early as 1921 and 1922, but it was not in the broadcast service and was only 100 watts at best.



KFKX QSL card sent to listeners around the world.

KFKX in Hastings was granted a license in September 1923. It was a medium wave outlet on 1040 kHz with 500 watts. A month later its shortwave sister station was licensed as 9XW and authorized for what was then a whopping 10-thousand watts.

Testing began on November 15. KFKX set up a receiver at a quiet spot two miles out of town to pick up KDKA's shortwave sister station 8XS on 3200 kHz and feeding the reception by phone line to the KFKX studio. The programming was aired locally on KFKX and also broadcast on 9XW to KGO in San Francisco for local rebroadcast. Thus was born "The Pioneer Repeating Station of the World," a slogan adopted by KFKX.

The 9XW relays were on frequencies noted to vary from 2730 to 2885 kHz and were heard around the world. Reception reports came in from all over the US, Canada, and Central America. Also letters arrived from "Brazil, Alaska, Hawaii, China, Holland, Uruguay, Australia, France, South Africa, and from ships at sea" boasted a KFKX publication sent to listeners. It's signal was picked up for re-broadcasts on medium wave in other countries in addition to KGO, including England, South Africa, and Australia (*On The Short Waves 1923-1945*, Jerome S. Berg).

It's uncertain that there was a regular schedule for relays of KDKA, although it's QSL card listed the relay as 5:15 to 6:15 p.m. daily except Sunday. Locally, KFKX on 1040 aired its own programs in between KDKA pickups.

The operation lasted for just over three years. When KDKA joined the NBC network in early 1927 shortwave broadcasts were discontinued. KFKX continued operating locally until shut down by the FRC that fall. The license and transmitter was moved to Cleveland to co-exist with Westinghouse-owned KYW but was soon shut down as unnecessary.

TRACKING THE FACILITIES, NOT THE CALL LETTERS

Stations in this work are often identified by call letters and dial positions together, helpful in keeping track of each station. When tracking stations, novices sometimes follow the call letters in believing the station moved elsewhere. In fact, the station is stationary. Discarded call letters are allowed to be taken over by a different facility nearly anywhere else in the country, even reappearing within the original market on another station. In Omaha KLNG was used on the 1490 kHz station for about ten years then later appeared on a Council Bluffs station on 1560.

But it's only the call letters that move; the station itself remains with a new identity. The old call letters might show up elsewhere or remain unused, but the station itself has merely changed its identity.

In some occasions the station itself may move to a different community of license. Some local examples are KOIL moving from Council Bluffs to Omaha in 1936, and KFAB moving from Lincoln to Omaha in 1947.

Dial positions for single stations can also change as they frequently did in radio's early years. In these instances, the station simply adjusts its frequency to a new spot on the radio dial.

CALL LETTERS ASSIGNMENTS

A method was required to identify the otherwise faceless signals on the air. Stations were assigned call letters to identify themselves every thirty minutes and at the start and end of transmission. Today the identification requirement is hourly, near the beginning of each hour. The call letters must be followed immediately by the community of license to qualify as a legal identification. In later years, the ownership name was permitted to be inserted between the two if desired.

The U.S. was divided into nine Radio Inspection Districts. Nebraska and Iowa were in District 9. While ship and shore stations were assigned three-letter calls, regular amateurs and experimental stations were given two-letter calls preceded by its district number.

The assignment of the two letter calls had one restriction: regular amateurs received calls whose first letter following the district number was A through W. The letters X, Y, and Z were reserved for the three license classes known collectively as Special Land Stations.

The land station's license classes were identified with X for stations holding Experimental licenses, Y for stations holding a Technical or Training School license, and Z went to stations operating with Special Amateur licenses.

Government stations had a separate call letter system using only letters. The prefix letter was K, W, or N. K calls were issued to government Post Office Department stations, W calls to U.S. Army stations and Light Vessels, and N calls to U.S. Navy stations.

The first list of licensed stations appeared July 1, 1913. It included a dozen Special Land Stations, the nearest to Omaha being 9YI in Ames, Iowa at the Iowa State College of Agriculture and Mechanical Arts.

This call letters arrangement will shake out into a simpler system as broadcasting continues to grow.

UNDERSTANDING WAVELENGTH AND FREQUENCY

The numbers on a radio receiver's dial correspond to the station's operating frequency in cycles. Each new wave is a cycle which travels at the speed of light. These cycles are measured in terms of how many are sent out per second. WOW on 590 kilocycles (kilo the prefix for "thousand") is transmitting 590-thousand cycles per second, making it's dial position 590.

Stations at the high end of the broadcast band send out a radio wave cycle more frequently than those on lower frequencies. This keeps stations separated from each other on the dial.

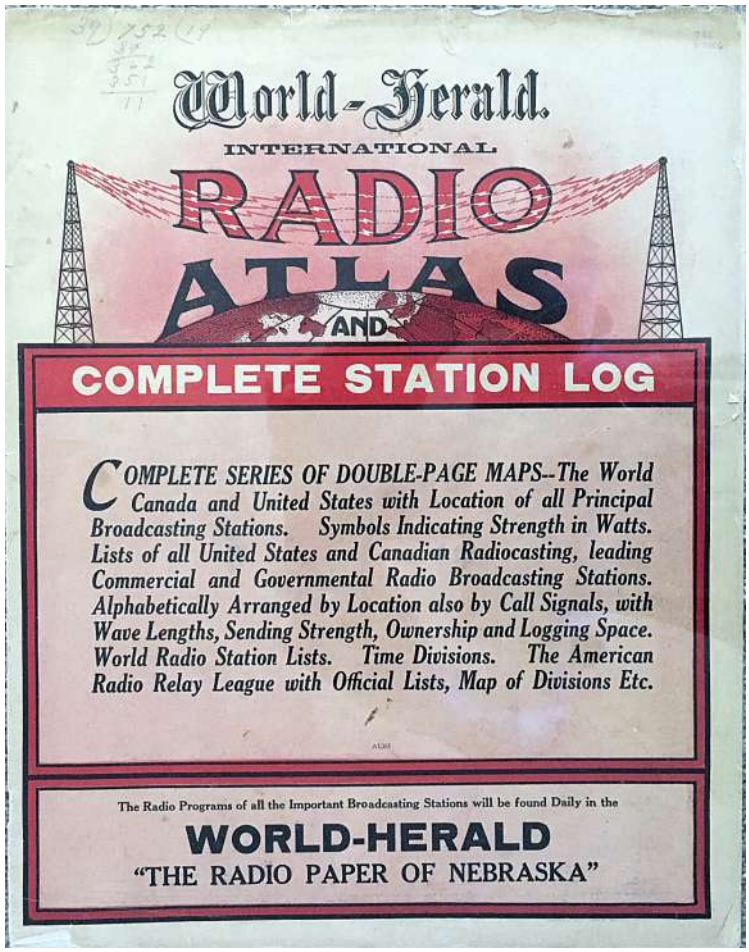
In the dawning days of radio, the dial position was indicated in wavelengths instead of cycles. A wavelength is the distance measured in meters that a radio wave travels before the next wave, or cycle, is sent. So, picture it: the more waves leaving the transmitter each second, the shorter the distance between the waves. The wavelength in meters becomes lower as the frequency gets higher.

All that really needs to be understood is that wavelength and frequency are inversely proportional.

Cycles today have been renamed Hertz, in honor of Heinrich Rudolf Hertz who in the 1880s provided conclusive proof of the existence of electromagnetic waves. AM radio cycles number in the thousands, called kiloHertz. On the much higher frequencies used by FM, cycles occur in the millions, called megaHertz.

Omaha World-Herald Radio Atlas, marketed in 1926 for 25 cents.

As a tool for radio listeners to find and hear distant programs, the Atlas contained listings and maps for all U.S. and Canadian stations.



CHAPTER TWO- THE FIRST STATIONS

“I grew up on a farm in south-central Nebraska, becoming hooked on radio in the 1920s during visits to a neighbor who had an Atwater Kent battery ‘three-dialer.’ It took a 100-foot antenna up as far as possible, along with a long metal ground rod, to get decent reception. I remember hearing KDKA in Pittsburgh, KFKX in Hastings, NE, WHB in Kansas City, WOAW in Omaha, WSB in Atlanta and even a high-powered station in Havana, Cuba.” -- Al Smith, who went on to become a broadcast engineer for KMMJ Grand Island and for KFAB Omaha.

"The first announcer I heard was Bill Hay on KFKX in Hastings. He later was the announcer for Amos N Andy" –- Percy Ziegler, who grew up in Superior, Nebraska and later was broadcast engineer at KOIL, KFAB, and at WOW where he became a sidekick for Johnny Carson.

The Omaha market saw four major players sign on in consecutive years beginning in 1922.

1. The first was WAAW in 1922, operated by the Omaha Grain Exchange. It’s the oldest continuously operated station in Omaha, now on 660 kHz.
2. WOAW (later becoming WOW) arrived in 1923, owned by the Woodmen of the World insurance exchange.
3. In 1924 KFAB was begun by a Buick dealership in Lincoln, remaining there for over two decades before becoming an Omaha station.
4. KOIL in Council Bluffs, Iowa signed on in 1925 owned by the Mona Oil Company, operating there for a decade before moving its community of license to Omaha.

WAAW— OMAHA’S OLDEST

WAAW was founded by the Omaha Grain Exchange as a means of reporting grain prices for farmers and regional grain elevators. Even though market reports were the major catalyst, the station went all out with music and speech entertainment for its inaugural broadcast.

WAAW would broadcast from the eight-story Exchange Building on the southwest corner of 19th and Harney Streets. A 15-watt transmitter built for about 100 dollars by Carl Hemple, a friend of Ronald Rockwell, was set up on the balcony overlooking the trading floor. The station was licensed to operate on 360 meters, the entertainment wavelength.

Omaha World-Herald staff writer and radio editor W. H. Graham organized the inaugural broadcast under the auspices of the newspaper, set for the evening of April 25, 1922.

The program began at 8:06 p.m. Announcer Raymond Rainboldt hosted, backed by a 40-piece orchestra directed by Dan Desdunes. Omaha Mayor James Dahlman was introduced and spoke about Omaha, opening with a greeting "from the 200 thousand people of Omaha to this vast audience reaching I know not how far away from where I stand here in the Omaha Grain exchange." The band followed, as did some vocalists. The broadcast concluded with greetings in Morse code.

A studio audience of about 500 people sat on the floor of the exchange during the 90-minute program, with hundreds, perhaps thousands more listening at distant locations on their receiver sets. Mr. Graham estimated there were fewer than 100 receiving sets in all of Nebraska, although an *Omaha World-Herald* story in March 1922 placed the estimate at 2000.

The largest local radio audience according to the *OWH* was at the Chamber of Commerce where a receiver was set up in the main dining room. 250 people heard the broadcast clearly.

Station operator H. R. Hosford testing WAAW's new 500-watt transmitter, 1923. The old 150-watt unit, not even a year old, is on the left. (Courtesy Omaha World-Herald).

Another group listened at the Fontenelle hotel where a receiver was set up on the mezzanine floor. Another 200-plus people filled the lobby at the Carlton Hotel to applaud the broadcast. At Fort Omaha, a group of officers and kids gathered to listen, though government business over the wireless created occasional interruptions. Four hundred more at Plattsmouth High School's auditorium heard the concert, though with occasional static.

Distant reports came in from Norfolk and Alliance in Nebraska, and Osceola, Iowa. Occasional static was reported, particularly from the Nebraska Panhandle where a storm wiped out the second half of the broadcast.

Within days steps were taken to increase power to 150 watts. New transmitting equipment was tested a month after the initial sign-on (*OWH* May 20, 1922).

Additional operation on 485 meters was authorized for WAAW in September 1922 for all broadcasting “except the concert.” This was the channel dedicated by the Commerce Dept. strictly for weather and market reports.

In May 1923 WAAW was the only Omaha station to react to a threatened lawsuit by ASCAP, the American Society of Authors Composers and Publishers. Rather than air ASCAP-licensed recordings for the huge royalties being sought, WAAW played no music except for the *Star Spangled Banner*. (The ASCAP lawsuit soon faded but the die was cast. ASCAP began collecting royalties from radio in 1931.)

There were upgrades and growing pains in the works. In anticipation of a power increase to 500 watts, Ray Rainboldt began work on transmitter modifications while two 90-foot towers were erected on top of the Grain Exchange Building to support a better antenna. (*OWH* June 24, 1923).

The upgrade was tested by special permission to operate on 278 meters/1080 kHz, with a return to 360 meters/833 kHz when testing was completed (*OWH* Aug 19, 1923).

During this time WAAW teamed with the *Omaha World-Herald* in airing a major boxing event, scooping all competitors. The Jack Dempsey–Luis Firpo heavyweight match on September 14 would be one of the defining fights of champion Dempsey’s career.

The *World-Herald* leased a phone line direct to ringside at the Polo Grounds in New York. As the fight descriptions came in by teletype they were immediately read by a *World-Herald* announcer in a glass-enclosed booth at the Grain Exchange. The fight lasted two rounds. WAAW announced the winner at least seven minutes before WOAW broke into programming with the bulletin.

WAAW remained on 360 meters/833 kHz with 200 watts for a while after the new broadcast band was allocated in May and also continued to use 485 meters for market reports seven times daily (*OWH* Sept 23, 1923). In the meantime, a studio on the balcony in the Grain Exchange Building was being built.

WAAW adopted the slogan *Where Agriculture Accumulates Wealth*, to match the call letters (February 1924). It was the winning slogan from an on-air contest.

Full authorization for the new antenna and 500-watt transmitter came in spring 1924 (RSB April 1924). Night time tests (legal for daytime-only stations after midnight) resulted in reports from as far away as Utah, Texas, and Ohio.

The progress was short-lived. Despite the splashy and promising beginnings for WAAW, the station found little encouragement from governmental regulators in its journey to maturity. That summer the station was finally moved to the new broadcast band, assigned to 1050 kHz (RSB July 1924). The higher frequency reduced coverage. Where the daylight signal once could reach west to farms at the Wyoming state line, the higher frequency was going only as far as North Platte.

In November 1924 the station was moved again to 278 meters/1080 kHz. Station Operator Harold Hosford said the high frequency further reduced the station's range, now limited in the daytime to about two hundred miles. He requested the Commerce Department allow the station to return its 360-meter wavelength, 833 kHz which afforded good coverage of Nebraska to the west (*OWH* Feb 22, 1925).

The following month the request to change frequency was approved. But before moving back to the original broadcast wavelength, the station was given an even better, lower frequency. It was 384.4 meters/780 kHz. However, it came with strings attached: the programming was limited to market reports and operation was restricted to daytime hours no later than 7 p.m.

WAAW was allowed commercial operation in 1926. During the summer when the Department of Commerce lost control and many stations began a “wave jumping” free-for-all, WAAW dutifully remained on 780 kHz. WAAW had no reason to move as it was a daytime-only station. With no night time schedule, the after-dark interference that cluttered the band was not an issue.

The new Federal Radio Commission took charge in 1927 assigning many new wavelengths to take effect June 15. WAAW’s 500 watts was again moved, assigned to 374.8 meters/800 kHz. The restriction of daytime-only market reporting remained intact (RSB May and July 1927). The station management requested to stay on the air until 9 p.m. but was denied in favor of stations on that wavelength in Detroit, Missoula (Montana), Beaumont (Texas), and Santa Monica.

Before the station had time to settle in on its new frequency, WAAW 800 was moved again, this time to 440.9 meters/680 kHz. There were more restrictions. Still limited to 7 a.m. to 7 p.m. daytime operations, WAAW would now share time with KFDY, the South Dakota State College station in Brookings (*OWH* October 30, 1927, and RSB Oct 1927).

This latest change came as the result of the newly formed FRC embarking on its new project, clearing 25 frequencies in order to create clear channels for long distance reception.

The FRC kept going. The government continued to carve up the broadcast band and extended the number of clear channels to forty. On these channels, there would be 53 stations identified to operate with high-power and free of interference.

To accommodate the new clears WAAW 680 was moved one last time, landing on one of those clear channels, 660 kHz, but *not* as the designated clear channel station. WAAW remained restricted to daytime operation. The full-time high-power assignment went to WEAF New York City, which would be regularly heard in Omaha at night after WAAW signed off for the day.

(New York's 50-thousand watt license on 660 remains to this day, though the clear channel concept has since been abandoned. The New York station has changed calls over the years to WNBC, WRCA, back to WNBC, and to Sports Radio WFAN.)

WAAW remained daytime only with 500 watts on 660 for decades. The restricted hours would prove to be a major drawback in later years. The station reached a peak in the 1950s when it became KOWH, a high-rated pioneer Top 40 station, but the daytime-only limitation kept it from holding its market lead when full-time competition in that format appeared.

The eight-story Omaha Grain Exchange Building remains at 1905 Harney Street bearing little resemblance to its original 1916 design. It has an entirely new façade with a remodeled interior. A picture of the pre-renovated building hangs near the elevators, and one can still find an original staircase and the original bronze mail slot, both remainders from the WAAW years.

Can WAAW really claim to be Omaha's first radio station? As seen earlier, broadcasting of sorts took place in Omaha many months before the sign on of WAAW. So to loosely award WAAW the title of Omaha's first station, a close look at the determining factors is necessary.

Radio as an entertainment medium wasn't officially recognized until September 1921 when the Commerce Department assigned an entertainment channel, 360 meters/833 kHz.

WOU was the first Omaha station to be assigned to 360 meters/833 kHz, just weeks before it was formally designated as an entertainment channel. The station was owned by R. B. Howell who turned it over to the Metropolitan Utilities District. M.U.D. made no effort to pursue entertainment broadcasting. The station had no regular schedule. As a result, the license was deleted after a year of M.U.D. ownership.

Next was Yeiser's WDV starting up in March 1922. It was soon forced off the air for not staying on frequency.

WAAW was the third Omaha station granted a license to broadcast on the entertainment wavelength, signing on in April 1922.

WAAW EKKO Verification stamp of the 1920 and 30s.

Of these three stations, WAAW was the first to do so with an organized programming schedule and signed on in style with an extravagant premiere broadcast on its very first night (*OWH* 4-2-22).

One other station makes a legitimate claim to be "first." That was Ronald Rockwell's WNAL. Rockwell's station was licensed several months after WAAW, but because Rockwell had been broadcasting programs over his amateur station 9VE as early as 1921, WNAL was perceived as a continuation of his amateur station's entertainment schedule. Indeed WNAL began calling itself *Omaha's Pioneer Station*. WNAL left the air by 1928.

Whichever is regarded as Omaha's first broadcast station, WAAW is at least Omaha's oldest station. WAAW on 660 later became well-known as Top 40 pioneer KOWH in the 1950s, followed by a switch to beautiful music KMEO in 1960, and eventually religious broadcaster KCRO.

WOAW WOW-- OMAHA'S BIGGEST

Though not the first on the air, WOAW may have been Omaha's first to seriously make plans for a broadcast station. Studio construction for WOAW got underway in 1919, three years before WAAW launched, and a full four years before finally reaching the air as Omaha's second long-term broadcast station.

WOAW's owner was Woodmen of the World, an insurance cooperative that believed in broadcasting's future and had the cash to back it up. The company spared little expense in building a state of the art facility.

Additionally WOAW had financial assistance from six Omaha banks, a car dealer, electric shop, and the J. L. Brandeis department store, each contributing funds to help start WOAW as they believed a big station would help Omaha's growth (WOW Archives).

1923 photo of WOAW's new studios and towers atop the 18-story Woodmen of the World Building. The studio's huge pane of glass is shown here being hoisted upward for installation.

The station would be housed in its Woodmen Building at 1323 Farnam Street, the tallest building between Chicago and San Francisco since 1912. A beautiful building for the day, its 30-foot high main lobby had carved marble stair cases and polished brass everywhere. New “motorized” revolving doors protected against the harsh Nebraska winters.

Woodmen added a 19th floor on the top of the building that would be home to the radio station’s transmitter plus a studio large enough to hold an audience for live broadcasts. A large, heavy 7×14 pane of glass was hoisted up the side of the building and mounted in front of the stage to soundproof the studio audience from the performances. Audience interaction was not yet discovered to be a positive element in programming.

Meanwhile, the 250-foot Woodmen Building was becoming an even more distinctive sight on Omaha’s skyline at the start of 1923 when a pair of 100-foot steel self-supporting towers were erected on the roof, the towers nearly half the height of the building itself. The towers supported a horizontal transmitting antenna between the southwest and northeast corners of the building.

With that came a new, commercially-built transmitter, the first non-homemade transmitter in Omaha. Until this time broadcast transmitters had been hand-built by amateur enthusiasts or those trained in radio during the war. The new unit was a $20-thousand Western Electric transmitter rated at 500 watts. Western Electric had just entered the commercial broadcast transmitter market the previous year and had sold 30 units by that year's end.

WOAW Logo 1923. A close look at the artwork reveals a bee stinging the dog's tail (courtesy Omaha World-Herald)

Omaha’s extremely knowledgeable radio technician Ronald Rockwell installed the station equipment, assisted by John Yeiser. Both were experienced station licensees. Lou Chanksy was the station’s first operations engineer.

WOAW was assigned the dial position of 570 kHz, the first Omaha station authorized to sign on to the newly-formed broadcast band designated as 550 to 1350 kHz. It was a clear channel for WOAW at this point, as most stations that had reached the air earlier remained on their 360 and 485 meters dial positions for the time being.

WOAW's launch was set for April 1923, but test programs featuring piano music and vocals were aired in late March at 9 p.m. Reception reports came from as far away as Jacksonville, Florida. Earlier experimental tests in late 1922 by engineers Yeiser and Rockwell brought in reports from Hawaii, the mid-Atlantic, the Arctic, and Brazil (WOW Archives)

WOAW 570 officially began broadcasting from its newly-christened "Crystal Studios" atop the high-rise structure in downtown Omaha on the spring evening of April 2, 1923. 570 kHz lit up with the full 500 watts.

The inaugural broadcast began at 9 p.m. with the *Star Spangled Banner,* followed by remarks from Omaha Mayor Dahlman and Nebraska Governor Charles W. Bryan. Live music was provided by Arnold Johnson's Symphonic Orchestra in advance of its engagement at the Brandeis Restaurant (OWH April 3 1923).

(The Brandeis Restaurant was one of the very few fine-dining restaurants at the time, located on the tenth floor of the Brandeis Department Store building, downtown at 200 South 16th. The elegant restaurant lasted just five years, 1921 to 1926.)

Music was also provided by the Canadian NW Band of Edmonton, the Scottish Rite Quartet, soprano Margaret Burns, and pianist Mrs. L. F. Cofoot. Requests for responses were aired in seven different languages. The hour-long program aired twice with a half hour intermission in between (WOW Archives).

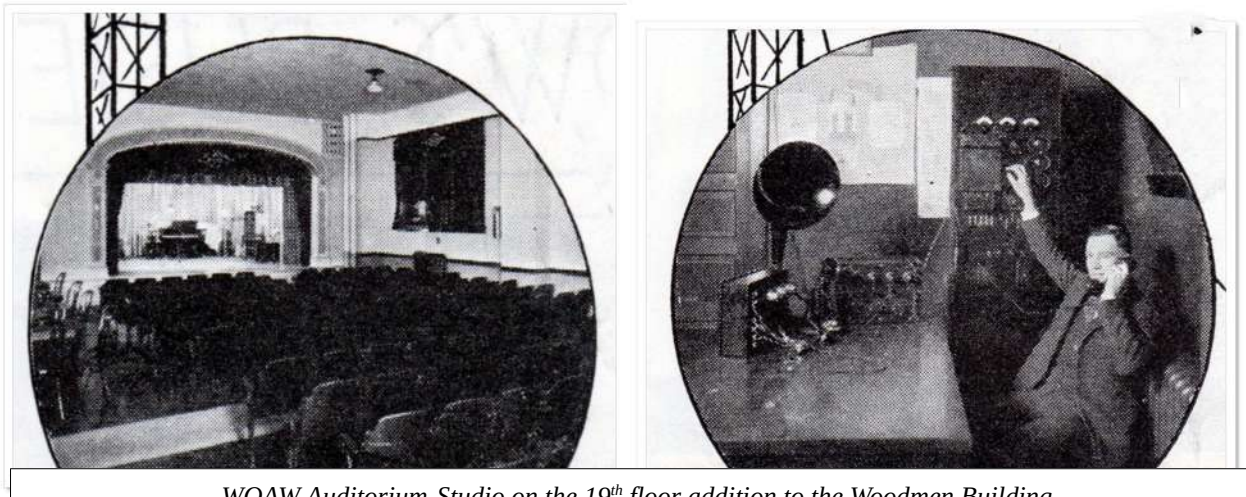
The regular schedule thereafter was 9 p.m. to 10:30 p.m. The station's slogan was *The Omaha Station*.

On April 7 1923 after one week on the air, WOAW began the *World Radio Chapel,* a Sunday service that built a following called the "World Radio Congregation," led by The Reverend R. R. Brown. Hesitant in the beginning, Brown became a pioneer in radio ministry and continued to broadcast his program over WOAW/WOW for the next forty-one years. His fiery sermons attacked the microphone at full volume but still sounded as if he was talking one-to-one. The program never missed a Sunday.

Though religious programs had debuted on radio two years earlier, Rev. Brown's was the first non-denominational radio church service in America, later recognized as the most continuous program, religious or secular, on any station in America (WOW Archives).

Later in April, WOAW offered a five-dollar cash prize to the listener reporting reception from the greatest distance. The winner was from Quebec, with other replies coming from Toronto and Baltimore. A more distant winner was later announced, that report coming from Sydney, Nova Scotia, 1800 miles distant (*OWH* April 27, 1923).

The WOAW "Crystal Studios" auditorium seated 300, lighted by a central crystal chandelier and side lights. The color scheme was gold and blue. Speaker horns were concealed in the upper front of the studio for visitors to hear the program.



WOAW Auditorium-Studio on the 19th floor addition to the Woodmen Building.
WOAW's first operations engineer Lou Chansky is shown at the transmitter controls.

Another closed studio adjoined the main studio, adapted for artists who were temperamentally inclined to avoid visible audiences. The announcer's control booth was directly between the two studios.

Elsewhere there was "a large, comfortable and beautifully furnished reception room for artists and guests, and a cloak room for the safekeeping of wraps and a smoking room. Four bridge tables stood along the east aisle, distributed at such distances as to enable the audience to watch the progress of the bridge games at the same time they are being radiocast." (*Chicago Radio weekly*, Sept 19, 1927). (On-air bridge games proved somewhat popular during radio's dawning days as programmers sought ways to inexpensively fill air time.)

The WOAW staff numbered six people. The first program director was Lester Palmer, said to put in 18 hours a day at the station. He also was a pianist, organist, composer, and editor of WOAW's semi-monthly Radio Bulletin. Palmer like to study law in his spare time.

WOAW's first staff and management:
Program Director Lester Palmer, Announcer Gene Rouse,
and Operations Manager Gene Stiles. (WOW Archives)

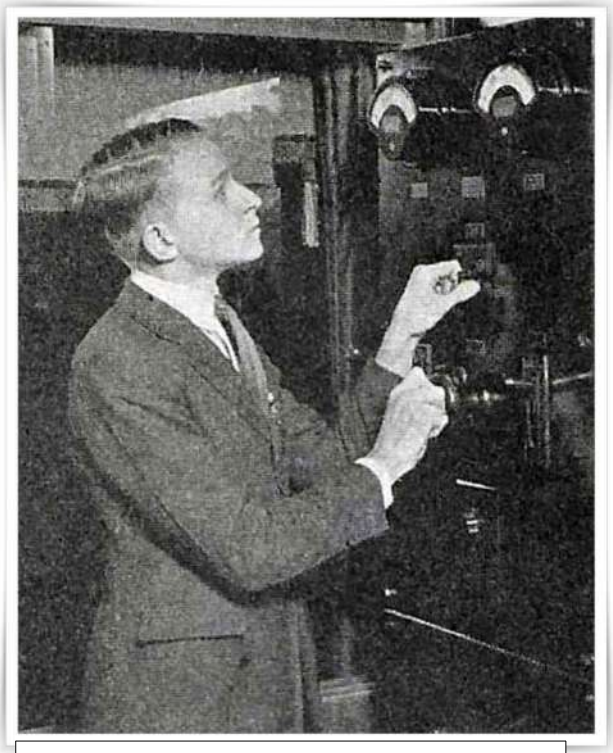
The station's first announcer was Gene Rouse, a thespian turned journalist who started out at the *Kansas City Star*. He joined WOAW in 1923 after gaining radio experience at WNAL, an *Omaha Bee* station at the time.

Rouse was the newspaper's sports reporter but was relieved from that position in 1921 and told to run WNAL. Radio was a new challenge but Rouse succeeded and remained in radio, joining WOAW in 1923. Two years later he moved on to Chicago as an announcer for various stations and for NBC during radio's Golden Age of the 1930s. In his pre-retirement years Rouse returned to his journalism roots joining the Visalia (California) Times-Delta in 1946.

WOAW's operations manager was Orson Stiles, national sales manager for the Woodmen Society and a driving force in getting the station on the air. Stiles credited his success to other broadcast pioneers who assisted him, namely Lamden Kay of WSB Atlanta and Harold Hough of WBAP Fort Worth (WOW Archives).

Two licensed engineers ran WOAW, Lou Chansky and Frank McIntosh, the latter going on to develop high-end High Fidelity audio equipment that bore his name in the 1940s.

WOAW 570 increased power to 1000 watts in December 1924 (RSB January 1925).



WOAW engineer Frank McIntosh in 1925 photo.
(WOW Archives)

On the station's third anniversary in April 1926, Kellogg Company offered a free package of Pep to any person who heard and wrote in asking for the product. Over 100 thousand packages were requested and supplied (WOW Archives). (Kellogg's Pep was a whole-wheat breakfast cereal introduced in 1923. If was discontinued in the late 1970s.)

During the summer of 1926 when there was no federal radio regulation, WOAW 570 stayed out of the wave-jumping fray, likely because of its being on an already favorable frequency.

Later that year came a call letter change. WOAW had originally requested the call letters WOW for Woodmen of the World but found those calls belonged to the *Henry J. Bibble*, a ship in the Pacific. Just two years later, the ship's owners dismantled its gear and gave up the license. The calls were quickly snatched up by WOAW's owners. Finally getting their coveted WOW calls, the changeover was completed on December 15, 1926.

Woodmen of the World Building with the WOAW rooftop 19th story addition and towers on top of the building. (WOW Archives)

(This unique and historical set of call letters was Nebraska's only three-letter call and remained in use for decades until unceremoniously discarded in 1999 during radio's consolidation period. The calls lived on for one more year on sister station WOW FM, but those, too, receded into history in 2000.)

In early 1927 the Federal Radio Commission was formed and immediately took control of the wave jumpers. The agency assigned three-fourths of the country's stations into a crowded portion of the band below 300 meters, the high end of the broadcast band. WOW was rewarded for staying out of the wave-jumping anarchy and allowed keep a wavelength on the portion well above 300 meters.

The new dial position assigned was 508.2 meters/590 kHz taking effect on June 15, 1927. Power remained at 1000 watts.

WOW 590's 1000 watt signal hugged the terrain for over 200 miles in all directions. The station was widely heard over a good portion of Nebraska and five of its neighboring states.

WOW's night time signals reached out even further, the skywave bouncing off the earth's ionosphere coming down hundreds of miles away. Skywave reception is less reliable and is susceptible to fading in and out, but often quite listenable at distant points.

One night in 1928, WOW 590 was heard on a crystal set in Washington D.C. 1026 miles away, a record at the time for crystal set reception. Also during this period, noted explorer Donald McMillan reported hearing WOW within 11.5 degrees of the North Pole, saying it was one of four stations on which he depended for reception.

WOW experienced another Omaha first in 1927 with a regular network affiliation. It became a member of the NBC Red and NBC Blue chain, the year-old networks arriving September 4th.

The first show was the Crosley Moscow Art Orchestra that Sunday afternoon at 3:30 live from NBC's WEAF in New York. Other NBC shows would follow: the Cadillac program on the 7th, and the Philadelphia Battery Company program on the 16th. (*OWH* Aug 28 1927). (Shows were often identified by their sponsors, the actual producers of the programs.)

WOW, with Omaha's best signal, had the network that would remain the most popular for at least another ten years.

(KOIL 1080 was the market's second network station exactly two weeks later. It received more attention as it was carrying the premiere broadcast of the Columbia Phonograph Network, later CBS, and for being the westernmost station in that chain. Interestingly, KOIL carried NBC's first program a year earlier, a one-time special on September 15, 1926, two months before that network's official launch.)

The FRC meanwhile was turning its attention to creating clear channels. In September 1928 it was announced that 40 clear channels would be formed, allowing 53 stations to operate interference-free with high-power. The changeover would be in November.

This 1928 FRC restructuring of the broadcast band resulted in WOW remaining on 590, but no longer alone. It was required to share time with Wesleyan College's WCAJ Lincoln. Initially, WJAG Norfolk was also assigned to share time on 590 but was moved to 1060 kHz a month later (*OWH* Oct 17, 1928).

With WCAJ getting 1/7 of the broadcast day, WOW 590 was required to leave the air for three hours each day to allow the educational station air time. This arrangement continued into the 1930s as WOW entered radio's Golden Age in a battle to regain 590 kHz for itself.

KFAB— FROM LINCOLN, OMAHA'S FUTURE BIGGEST

According to Lyle Bremser, KFAB manager in the 1970s, KFAB's beginnings happened almost by chance.

Bremser told the *Omaha World-Herald* that Charles Carper, an executive with Sidles Company, an automotive parts firm in Lincoln, heard about "this new thing called radio" while on a business trip to Washington, D.C.

Getting a license was easy. Having time before his return train to Omaha, Carper went to the Commerce Department, filled out a form, paid the fee, and went home (*OWH* Dec 10, 2000).

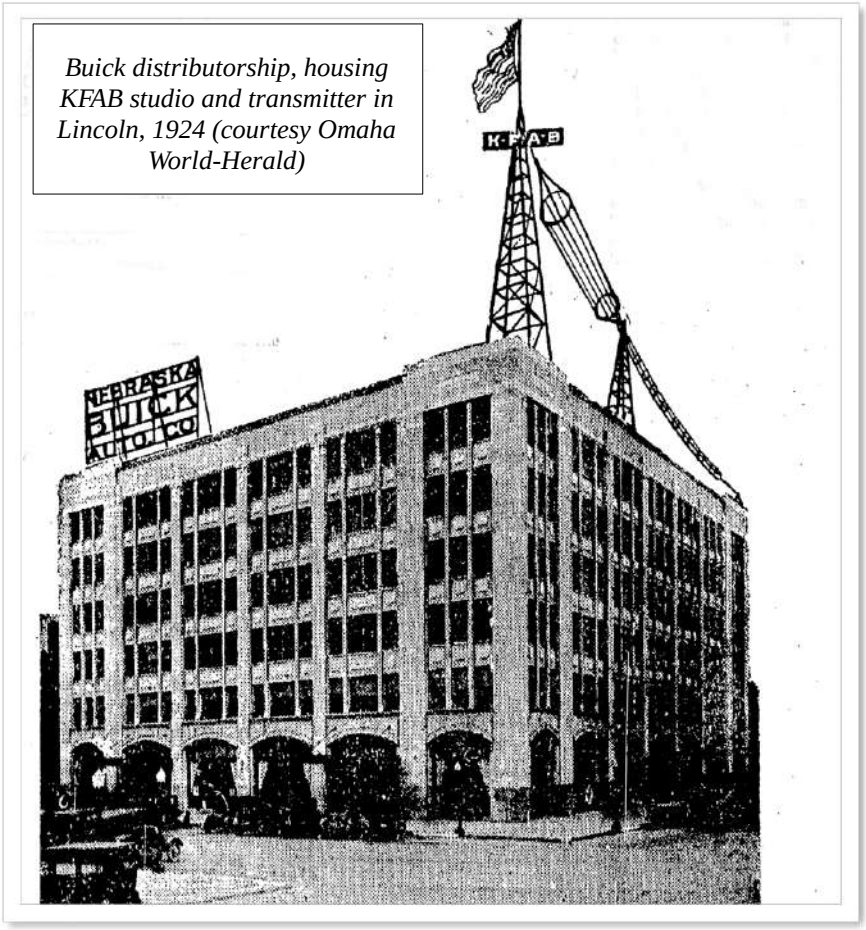
Thus was born KFAB as a Lincoln station in 1924, the first in that city. The station was authorized 1250 kHz on November 8, 1924 and was assigned the call letters KFRR. President Harold E. Sidles, owner of Nebraska Buick Auto Company, changed the calls to KFAB about two weeks before going on the air. Legend has it that the calls stand for *Keep Following A Buick*.

The station was set up in the Buick Dealership's six-story building at 13th and Q Streets in Lincoln. Two 75-foot towers 90 feet apart rose on the rooftop. Between the two hung an inverted L flattop type 4-wire antenna.

Harold Sidles, president, Nebraska Buick Auto Company and KFAB.

Chief Operator H. C. Harvey in charge of the station had been constructing and testing the equipment for three months, assuring a trouble-free broadcast on the inaugural night.

KFAB signed on the evening of December 4, 1924. The dial position was 240 meters/1250 kHz and the power was 200 watts, though newspaper accounts consistently reported the power as 500 watts. The discrepancy may have come from KFAB's omission that the station had to cut its 500-watt transmitter back to the authorized 200 watts. (RSB Dec 1924 lists 200 watts. KFAB was later authorized 500 watts in 1925 per RSB April 1925).



Buick distributorship, housing KFAB studio and transmitter in Lincoln, 1924 (courtesy Omaha World-Herald)

Studios were on the mezzanine floor overlooking the ground floor Buick showroom. Three receiving sets were set up in the building to entertain guests. Coffee, sandwiches, and desserts were served throughout the night from an upper floor of the building (*Lincoln Nebraska State Journal,* Dec 5, 1924).

There were well over 30 artists from Lincoln, Omaha, and Hastings lined up for the opening broadcast. The largest single group was the fifty-piece Shrine band from Hastings (*OWH* Nov 3, 1924).

The broadcast began at 7:30 p.m. and ran to 3 a.m. Speakers included Lincoln Mayor Frank Zehrung and Buick Co. President H. E. Sidles. Bill Hay of KFKX Hastings was a guest announcer. (Hay later went on to become the announcer for NBC's *Amos N Andy* shows during radio's golden years.)

KFAB's announcer was Gayle Grubb, hired from a music background where he toured for two years as the front man for the Rag-A-Jazz Orchestra. His group performed with him on this opening night.

It was the start of a career change for Grubb who remained in radio becoming the persona for KFAB. Grubb soon developed a following with the on-air nickname “Gloomy Gus.”

Like many stations in the early days of a quiet, uncluttered broadcast band, KFAB’s 200-watt signal reached great distances. Within two hours congratulatory telegrams began arriving from listeners along the Atlantic and Gulf coasts as well as the northern tier of states.

Almost immediately after its launch, KFAB was on the road to becoming an established and successful broadcasting entity. Nebraska Buick understood the power of radio, even selling radio sets alongside cars in the showroom. Such practice was not unusual. Radio sets were heavily marketed through the 1920s by a wide variety of businesses ranging from hardware, music, and furniture stores to the Nebraska Power Company.

In the coming months, DX (ham lingo for the word distant) reports came from points even more widespread. In 1925 KFAB 1250 was heard over six-thousand miles away by a member of a trading company in the Belgian Congo on March 4. He visited the station in August to report his reception.

Radio stations commonly scheduled only short blocks of broadcast hours in the early years. KFAB’s schedule ran 7:30 p.m. to 9:30 p.m. on Monday, Wednesday, and Friday nights, plus Sunday church services at 4 to 5 p.m.

The station grew in its first year. KFAB was authorized to move from 230 meters/1250 kHz to 340.7 meters/880 kHz with a bump in power to 500 watts in July 1925 (RSB August 1925).

Power was further increased to 1000 watts by September, still broadcasting from high atop its Buick showroom in downtown Lincoln (RSB October 1925). The signal continued to reach great distances. Among the reception reports received was a wire from the American vice consul at Apia, Samoa, reporting he heard the station (December 1926).

In October 1925 KFAB announced the station would be airing Husker football games on its new 1000 watt transmitter beginning with the 1926 season. The announcement coincided with the University of Nebraska reaching an agreement with KFAB to use its facilities for educational programming, leaving the University’s own station WFAV to air only “supplemental” programming.

The partnership with Nebraska University was begun in November 1925. Studios were set up in Memorial Stadium and in the College of Agriculture. The University began providing three daily programs from its campus.

The University programs were all less than an hour each. One of them included Professor T. A. Blair, meteorologist and director of the US Weather Bureau on campus. He quickly gained a following as a personable radio weatherman giving conditions and daily forecasts in more detail than other stations (*OWH* May 9, 1926).

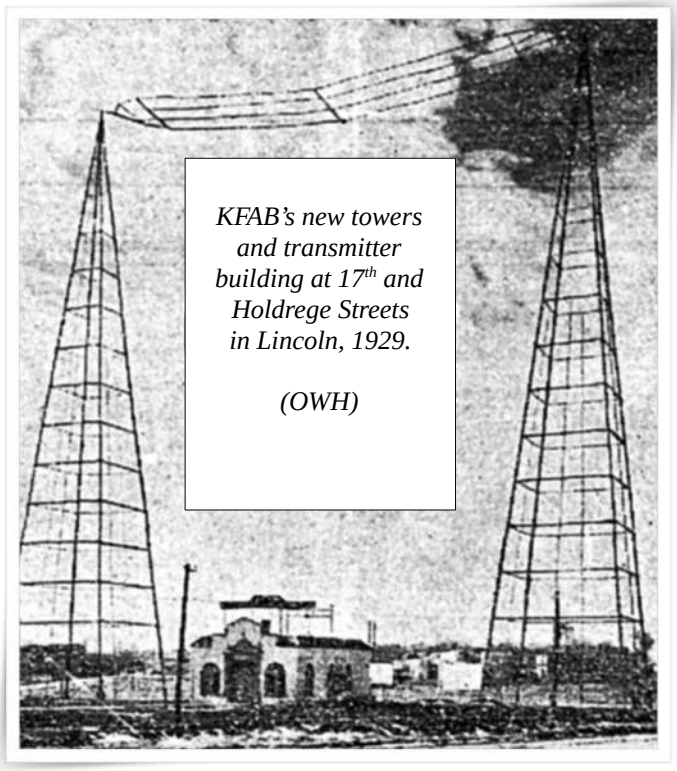
KFAB 880 celebrated its first year on the air with a spectacular anniversary program on December 4, 1925. Gloomy Gus hosted the show featuring five orchestras and over 200 talents. It ran from 8:30 p.m. to 4 a.m.

Many prizes were offered to listeners during the broadcast, with the grand prize for a new slogan being a new Buick sedan. Telegraph messages came in all night with 60 extra operators on duty. Long distance calls numbered over 2600. The official response count three days later was astounding: 14 thousand telegrams and 126 thousand pieces of mail. The slogan winner was from Gillette, Wyoming whose entry, *The Home Sweet Home Station*, was adopted and kept in use over KFAB well into the 1930s.

With the Commerce Department suddenly losing authority over radio stations in July 1926, some stations soon began hopping all over the dial seeking clearer channels for better coverage. KFAB stayed put on 880 kHz, the management announcing in September that they would adhere strictly to any requests made by the government.

That announcement coincided with news of a new transmitter site under construction along with a power upgrade. There are conflicting reports of how high the new power upgrade would be. Newspaper stories at the time reported it to be 5000 watts. Subsequent listings in commercial listener publications also showed 5000 watts. However, Commerce Department listings showed the maximum authorized power at 2000 watts.

The new transmitter location was at 17th and Holdrege Streets near the Nebraska State Fairgrounds. Two 150-foot towers supporting the antenna flanked a Moorish-style transmitter building (*OWH* Sep 5, 1926).



KFAB's new towers and transmitter building at 17th and Holdrege Streets in Lincoln, 1929.

(OWH)

The old transmitter on the 6th floor of the 13th and Q Buick Building was silenced in October 1926 when the new site took over. The KFAB studios remained at 13th and Q until 1931 when they were moved into the newly-built Cornhusker Hotel just blocks away at 13th and M Streets.

With the power increase and new transmitter, KFAB 880 began a tradition that the station kept for the next 70 years: KFAB began regular airing of University of Nebraska football games that fall.

Former Husker player Wade Munn from the 1918-1920 seasons was the announcer for home games. Later in the decade, the games were called by KFAB station manager Dietrich Dirks. Away games were brought in to the Nebraska Buick KFAB studios by phone lines.

(Nebraska football has a lot of history and can claim a notable radio first: The Huskers had the distinction of being in the first gridiron battle to ever air on radio when they played Pittsburgh on November 5, 1921. That game aired on KDKA Pittsburgh from Forbes Field. The Huskers won the contest 10 to 0.) (*The Lincoln Star*, Oct 26, 1930).

(Even earlier in 1921, the first broadcast of a Husker football game is said to have aired via Morse code over the Engineering School transmitter at the University. During a game that year, J.A. Brookes used a phone line transmitting play by play to fellow engineering students, H.H. Helm and B.E. Ellsworth, who in turn translated his descriptions into "the medium of the spark transmitter.") (Per 1952 thesis by Robert Earl Lee, noted in *Lincoln Journal Star*, Aug 25, 2002).

The government regained control of the airwaves in February 1927 with the formation of the Federal Radio Commission (FRC). Its first task was to rein in the wave-jumpers. KFAB, not being a guilty party to such anarchy, was assigned a new and still favorable frequency of 309.1 meters/970 kHz with 2000 watts (RSB May 1927). KFAB moved from 880 kHz to its new channel on June 15, 1927.

With the arrival of the national networks in Omaha still weeks away, KFAB 970 aired a one-time entertainment program from NBC Red on July 23, 1927. It wasn't the first such hookup for Omaha during the dawning days of national network development. KOIL aired a one-time NBC Red special program a year earlier, on September 15, 1926, two months before the formal launch of the network..

The NBC Red live broadcast at 8 p.m. was a one-hour show from the Roxy in New York sponsored by Buick promoting its new 1928 models. NBC Red had no regular Omaha/Lincoln affiliate just yet (WOW picked up NBC in September), and with KFAB being owned by a Buick dealership, arrangements were made for the station to air the show live from WEAF New York. KFAB's management invited the public to come to any of the Nebraska Buick Auto company's showrooms to listen to the broadcast.

The early network broadcast created much excitement. Listeners were awestruck with the clarity of the show compared to the usual nighttime long-distance reception for such faraway productions.

NBC Red soon gained its regular Omaha affiliate with WOW picking it up in September when the net's Chicago base became fully operational making regular feeds no longer such a chore. KFAB, however, wouldn't become an affiliate of a network until 1929.

Before the networks, local stations were creative in coverage of national events. Such was the case with prizefighting, a popular sport in the 1920s. KFAB 970 and the *Omaha World-Herald* teamed up to cover the much-awaited September 22, 1927 Jack Dempsy-Gene Tunney heavyweight boxing match in Philadelphia.

A microphone was set up in the editorial offices of the newspaper for Gloomy Gus to announce "in his own style" the fight from accounts via telegraph sent from ringside to the newspaper's newsroom. A public address system set up at 15th and Farnam conveyed the match to a large downtown crowd. Tunney's win was flashed by Gloomy Gus a full minute ahead of the nearest competitor. (*OWH* Sept 26, 1976 and Dec 12, 1927).

A similar broadcast using a *World-Herald* hookup took place four years earlier over WAAW when Dempsey fought Jose Firpo. That fight description was read word for word from the telegrapher ringside. The KFAB broadcast was more colorful, airing as a recreation by the announcer.

KFAB's Chief Announcer Gayle Grubb, popularly known as "Gloomy Gus," 1928 (courtesy Omaha World-Herald).

Gloomy Gus by this time had developed a following, the audience finding his versatility endearing. As chief announcer for KFAB, he was required to be skilled in handling a multitude of duties and situations. His talent range included hosting musical programs, recreating sporting events, making appearances and even singing.

In a *World-Herald* interview Grubb called announcing "A great life if you don't weaken… it's a hard life. I've been left alone when some of the artists backed out and have had to do everything from whistling to turning handsprings in order to save a program."

Grubb went on to say sometimes when a tube would blow out he would have to reassemble the threads of the program when returning to the air (*OWH* July 15, 1928).

Grubb also handled some Husker sports. He did football play by play for the Nebraska-Army game from West Point in 1928. It was the first meeting of the Cadets with any Big 6 team. It went past dark on an unlit field, the Huskers losing 13 to 3.

Gloomy Gus likely was the impetus behind KFAB beating out all Omaha stations in a February 1927 *Omaha World-Herald* poll. KFAB was fourth overall, behind WHO Des Moines, and KMA and KFNF, both in Shenandoah.

Gayle Grub AKA Gloomy Gus moved on from KFAB in December 1928 taking over as program director at WKY Oklahoma City.

(In an interesting side note, while at WKY Grubb hired a young Walter Cronkite in 1937 to do news and play by play for Oklahoma Sooner football. Cronkite's first game was a disaster. One account is that Grubb took over calling the game and suggested Cronkite look for another profession. Cronkite glossed over this event in his autobiography saying that he was given a second chance, finished the game, and improved much to his, and Grubb's, relief. Gene Allen's *Early Radio in Oklahoma* states that WKY owner E. K. Gaylord eventually fired Cronkite.)

When Gloomy Gus left KFAB, a young Lyle DeMoss took over. DeMoss had been at the station for about two years. His husky baritone voice, skilled announcing, and singing talent quickly filled the void Gus had left behind. DeMoss had studied music at York while working at KGBZ and he later took music classes at the University of Nebraska, Lincoln, when he joined KFAB in 1926.

DeMoss became interested in radio while in high school in 1923, often stopping at a friend's house on his way home to announce and sing over his pal's station. The station was legally licensed but merely a plaything, a curiosity, as it was to many in the early 1920s. DeMoss recalled impersonating a famous vocalist one day, not realizing the magnitude of his joke until letters of praise from listeners who believed it was the real artist began arriving from all over the country.

Besides announcing, DeMoss became confident at ad-libbing commercials, a practice rather common in the early days of commercialism on local stations. That and his singing talent served him well for ten years at KFAB. He was the program manager for five of those years while also hosting the KFAB morning show, *Time N Tunes*, from 7 to 8 a.m. each day. DeMoss moved on to WOW in Omaha in 1936 where he rose to General Manager by 1950.

Meanwhile, the Federal Radio Commission was busy restructuring the AM broadcast band. The plan was to form clear channels for high-powered stations resulting in the lesser stations being moved to new wavelengths, a second and third move for many of them. Before the end of 1927, the FRC issued a list of new frequencies that showed KFAB moving to 319 meters/940 kHz, its second move of the year (RSB Nov 1927).

On 940 kHz the Lincoln station was ordered to share time with KOIL Council Bluffs, Iowa. Though the time-sharing restriction was a setback for both stations, on the upside both were permitted to increase power. For KFAB the increase was to five-thousand watts day and 2000 watts at night cementing KFAB's role as the most powerful full-time station in Nebraska (*OWH* Nov 17 1927).

KFAB's move from 970 kHz to 940 kHz took place on December 1, 1927, as it was for KOIL from 1080 kHZ in Council Bluffs. The two stations worked out an air schedule where they alternated blocks of airtime throughout the day and into the evening. The new schedule was the beginning of the end for the University of Nebraska extension service programs on KFAB as the school's time allotment was greatly reduced.

1928 saw more major events for KFAB. Besides losing its star announcer Gloomy Gus to WKY Oklahoma City, KFAB 940 was to become the poster child for a Nebraska Supreme Court decision that had national impact.

At issue were allegedly libelous remarks made in a 1928 KFAB broadcast by Richard A. Wood against his political opponent, Attorney General C. A. Sorensen.

Mr. Wood's speech was handwritten beforehand but not reviewed in advance by KFAB. He spoke for several minutes without station interruption.

The conflict stemmed from the Radio Act of 1927 preventing stations from censoring political speeches. KFAB argued that it was obligated to provide equal time to all candidates, and should not be liable for remarks made in a speech over which it has no control. KFAB contended that under this law it was prohibited from altering political broadcasting,

The ruling didn't come until 1932. The Supreme Court of Nebraska rejected KFAB's arguments saying the federal statute gave the broadcasting station no privileged position in transmitting libelous material and the prohibition of censorship was no defense to an action for defamation by radio.

Oddly, The federal commission regulating radio was directly opposed to the Nebraska Supreme Court view but didn't discuss the decision until 1948. Today the "no censorship of candidate remarks" ruling applies with no liability on the part of the broadcaster.

In the midst of its lawsuit KFAB 940 became more involved with political reporting. In December 1928, lines to the state Capital were installed for daily reports during the in-session months of the state legislature.

Also in 1928, the dial position moves weren't yet over. The FRC's General Order 40 called for further restructuring of the broadcast band to allow even more clear channels (released September 1928). KFAB was again moved, assigned to the new wavelength of 389.4 meters/770 kHz, and keeping its power of 5000 watts.

The time-sharing issue changed but presented a new problem. No longer sharing time with relatively nearby KOIL in Council Bluffs, KFAB 770 was now forced to divide time with two Chicago stations on the new frequency: WBBM and WJBT (Oct 25, 1928). Those two stations had been moved to 770 only a year earlier, WBBM from 1330 and WJBT from 640. WJBT was on the air for only a few hours a day.

The time division was only a night time issue, as the daytime signals did not overlap. But that was the worst part; KFAB's required silent time was during the prime time evening listening hours, an issue that KFAB would battle for the next five years.

KFAB completed the move from 940 kHz to 770 kHz on November 12, 1928.

In 1929 KFAB 770 began its ascent into radio's Golden Age by seeking to hook up with a national network. CBS had arrived two years earlier, premiering on KOIL to become that network's western-most affiliate. WOW picked up the year-old NBC Red network the same year.

This only left NBC Blue, the NBC Red stepchild that only aired leftovers and the less popular highbrow programs. NBC Blue was presently shoehorned in on WOW but available for a spin off to another station. KFAB declined the affiliation opportunity, instead pursuing a West Coast network that was developing in late 1928.

The American Broadcasting Company, not to be confused with the modern-day ABC network that was established in 1943, appeared more promising to KFAB management. It offered lots of original live music programming from its flagship station in Seattle, KJR.

ABC was set up by Seattle banker/businessman Adolph Linden. Originally, Linden wanted to tap onto the CBS line at KOIL, that network's westernmost point. From Council Bluffs he could bring CBS out to the West Coast while offering some programs in return from his KJR flagship.

CBS was on board with the plan, but soon ABC took on a life of its own. Linden's newly built and fully staffed studios at KJR Seattle began seeking its own affiliates.

Linden launched his network with a three-hour program sponsored by the Union Oil Company over five stations on December 28, 1928. Soon, programs from affiliates including KYA San Francisco were added.

Linden's blue-sky plans were more exciting than the lackluster NBC-Red leftovers on NBC-Blue. KFAB chose the new burgeoning network. KFAB was among five newcomers to join on June 1, 1929, bringing the network's total to twelve. ABC by this time had affiliates as far east as Chicago and St. Louis offering a 17-hour daily schedule.

As the summer neared its end, the network without warning went silent on August 22, less than two months after KFAB picked it up. Two days later Linden announced bankruptcy. His lavish spending had caught up with him.

(Linden's problems were just beginning. It was determined his cash debt was in the millions, and much of it came illegally from a bank he owned. He was convicted of embezzlement and spent seven years in prison.)

KFAB 770 immediately went to plan B, joining NBC-Blue on September 1, 1929, becoming the 69th affiliate in that chain.

The Depression and Radio's Golden Age lay straight ahead, during which time KFAB will grow, on its way to becoming Omaha's heritage station.

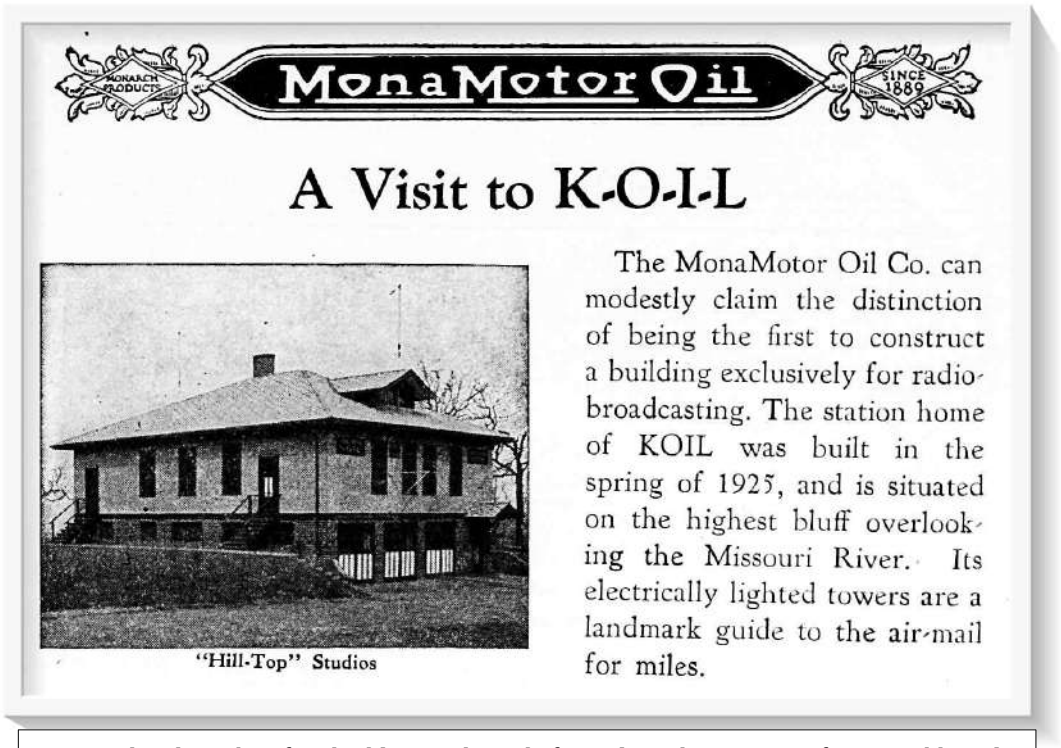
KOIL- FROM THE HILLS OF COUNCIL BLUFFS

Omaha's KOIL began as a Council Bluffs, Iowa station, situated in the Loess Hills that skirt that city's eastern edge. It's directly across the state line, marked by the Missouri River, from Omaha.

The station was the brainchild of the Searle family, owners of the Monarch Motor Oil Company, distributors of Mona Oil headquartered in Council Bluffs. The company marketed its products from a two-story brick building at 1126 South 6th Street. It also owned four gas stations in town.

By 1924 radio broadcasting was quickly showing itself to become a popular source of entertainment. The ability to legally promote a product over radio was not yet clearly defined but it was a tempting tool in getting one's product before the public. The Searle family established KOIL to sell oil, hence the calls, K-Oil.

Don Searle, son of Mona Oil President Harry A. Searle, was a visionary who foresaw the power of radio. He told the *Omaha World-Herald,* "The business of broadcasting is in its infancy, but I believe, like the automobile, it has come to stay and that no imagination can grasp its possible future developments."



MonaMotor Oil

MONARCH PRODUCTS

SINCE 1889

A Visit to K-O-I-L

"Hill-Top" Studios

The MonaMotor Oil Co. can modestly claim the distinction of being the first to construct a building exclusively for radio-broadcasting. The station home of KOIL was built in the spring of 1925, and is situated on the highest bluff overlooking the Missouri River. Its electrically lighted towers are a landmark guide to the air-mail for miles.

Mona Oil making the "first building exclusively for radio" claim in one of it's monthly radio schedule publications.

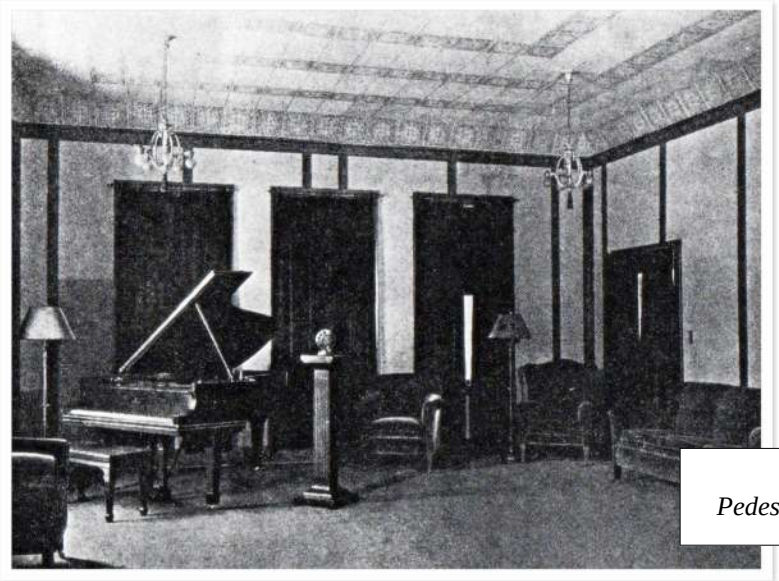
The Mona Oil Company applied for and received a license. Searle then sank 50-thousand of Mona Oil's dollars into a new building anfd equipment for the radio station. It is believed to be the first building in the country ever to be designed and constructed solely for the purpose of radio broadcasting.

A site in the picturesque wooded hills of Fairmont Park was selected in the commonly-held belief that high terrain had an advantage in flinging radio signals into the sky.

The two-story frame structure at 600 Huntington Avenue housed the transmitter room and a large studio for musicians. The reception room had a fireplace and French doors leading out to a lounging promenade that provided a view overlooking the Missouri River Valley toward Omaha. A nearby parking spot with a view westward over Council Bluffs and Omaha is called "KOIL Point" to this day.

Running the length of the promenade were windows where visitors could look directly into the studio and watch artists perform. Loudspeakers tuned to the broadcasts provided the programming audio to the promenade as well as into the reception area.

The main 20 by 30-foot studio was sound proof. It had a microphone on a pedestal next to a Steinway piano, played by announcer Howard "Howie" Martin.

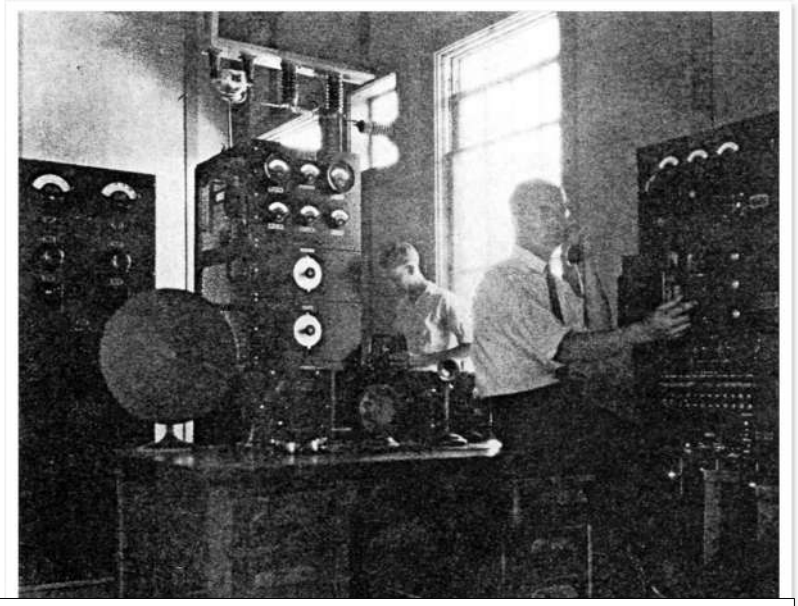


1926 photo of KOIL's main studio. Pedestal microphone is to the right of the piano.

The building had a sizable kitchen and dining facilities for traveling talent and station visitors. The downstairs garage could hold four cars on cold winter nights.

Just east of the building across Huntington Avenue a pair of 150-foot towers were set in concrete bases to hold the 200-foot long inverted V antenna stretched between the two.

The Chief Operator running KOIL's technical side was the ever-present R.J. Rockwell. By this time he had already gained experience at WOAW, KOCH, and his own WNAL in Omaha, and at Iowa State University's WOI in Ames, Iowa. He installed and would run the 500-watt Western Electric transmitter and the generator feeding it. He was assisted and later succeeded by Gordon Anderson, whose background included being a licensed ham radio operator.



1926 photo of KOIL's transmitter room. The vertical disc object on the left is a table-top loudspeaker, a common sight in control rooms of the day.

KOIL signed on in the summer of 1925 with 500 watts on 278 meters/1080 kHz. The "K-Oil" call letters were chosen to reflect its parent company's product, but on air KOIL called itself *The Hilltop Station*. The July 12 inaugural broadcast opened with the Blackstonian Orchestra from Omaha's Blackstone Hotel and a dedication by Mona Oil president H. A. Searle.

Radio pioneer Lee DeForest who was born in Council Bluffs was invited to give the formal dedication. But for health reasons DeForest was vacationing in Switzerland and couldn't attend the inaugural broadcast, instead sending a cable message to be aired. It read in part, "It is with the keenest delight and greatest pleasure that I learned a modern broadcasting station was to be opened in Council Bluffs, the city of my birth." (*OWH* July 9, 1925)

Vocalists and an address by Council Bluffs' Mayor Harding rounded out the programming that summer night.

KOIL's inaugural broadcast brought in responses from eight states and one Canadian province. Letters came from Denver, Chicago, and Youngstown, Ohio. KOIL then embarked on a regular schedule of 7:30 to 9 p.m nightly and a twice-weekly broadcast from 11 p.m. to midnight.

The KOIL Building in Council Bluffs. (courtesy Pottawattamie County Historical Society).
KOIL founder and president, Don Searle of the family-owned Monarch Oil Company.

Summers are often filled with static from distant thunderstorms. Winter conditions resulted in much quieter coverage. Before the station was a year old, letters came in from all over, the most distant being from the Aleutian Islands, the Hawaiian Islands, Cuba, Nova Scotia, Mexico, Hudson Bay, and off the coasts of Delaware and California.

The program director at the start of KOIL in 1925 was Harold Hughes. He recalled in a *World-Herald* interview with Robert McMorris that "Every station had its own band. And I did about everything. I sang and read news and did the commercials." (*OWH* July 5, 1969)

To further enhance the Mona Motor Oil name over the air, the station soon sponsored a musical duo incorporating the product's name as part of the performing name, a practice done on a national level with the likes of the Clicquot Club Eskimos and the A&P Gypsies. Called the Mona Motor Oil Twins, the two performed on the station as well as on a travel circuit to various other stations in the region.

John Wolfe and Ned Tolliner on the cover of Mona Oil's monthly publication.

The KOIL Mona Motor Oil Twins were John Wolfe and Ned Tolliner who played guitar and banjo respectively. The duo debuted on KOIL in January 1926, and by September had performed on over 50 stations.

Ned relates, "One night in the early fall we happened to be together at KOIL, and for no good reason at all sang over the radio...And boy! were we scared?" John says, "It wasn't stage fright. I guess you would call it 'mike fright.' Anyhow, it was terrible."

Ned continues, "Don Searle, manager of KOIL, heard us, and after giving us a bit of encouragement, invited us to come back, which we did. Later we conceived the idea of handling the microphone ourselves, that is, doing our own announcing and conducting our programs in an informal way." (*Chicago Radio Weekly*, Sept 19, 1927).

The Twins farewell performance on KOIL was in May 1929. The duo left for the West Coast to "continue their microphone work with one of the coast chains." The two ended their nine years together on December 1, 1934.

In July 1926 the acting Attorney General ruled the Commerce Department had no right to restrict frequencies used, hours of operation, or powers. No longer with government oversight, a free-for-all resulted among many broadcasters during the summer of 1926. KOIL 1080 was among the very first in the Midwest to appropriate a new wavelength for itself.

Despite possessing a seemingly good business sense, Searle, just a week after the ruling moved KOIL from 1080 kHz to 980 kHz and upped its power to 5000 watts (July 15, 1926, power shown per RSB Dec 1926). The frequency was determined suitable as only Providence and Seattle were on the channel. But only for a short while, as "wave jumpers" came in from everywhere.

Omaha listeners complained about KOIL 980 blocking KDKA Pittsburgh and WGN Chicago on nearby channels. Other Midwest offenders soon joined in. KFNF and KMA Shenandoah moved to 461.3 meters/650 kHz. Other moves came from KSO Clarinda, Iowa, and KMMJ Clay Center, Nebraska.

Secretary of Commerce Herbert Hoover during an Omaha stop in September warned that stations keeping to their wavelengths will be favorably assigned once Congress passes the necessary legislation. He was quite serious, as KOIL and the Shenandoah stations would later learn.

While on 980 kHz, KOIL was involved in a barely-recorded and little-known event in the history of network broadcasting. The station aired a radio spectacular originating from New York City a full month before the nation's first chain went live on a regular schedule. It was carried on 43 stations around the country.

The program was set up by RCA's David Sarnoff as a preview of his planned radio network which would be the nation's first national chain hookup. The program was fed over what was referred to as "the WEAF chain," the forerunner to NBC.

WEAF was owned by AT&T which also owned telephone lines that could form a radio network. The only competition was from the inferior Western Union telegraph lines. After AT&T decided to focus on telephones rather than broadcasting, David Sarnoff of RCA shrewdly bought WEAF for one million dollars in a deal that included the use of its phone lines for network development.

NBC was incorporated by RCA on September 9, 1926. The WEAF deal was set to close later, on November 15, 1926.

In the interim, Sarnoff's RCA set up this special broadcast from WEAF via AT&T lines for September 15. It would be a star-studded broadcast from the Waldorf Astoria in New York that evening, a full two months before the formal NBC launch from that same ballroom.

Omaha radio stores reported a rush on new receivers and repairs in time for the broadcast.

The program, hosted by Graham McNamee, ran from 7 p.m. to 11:45 p.m. Omaha time. Over 200 performers were trumpeted plus five orchestras, the WEAF light opera troupe, and the WEAF music comedy company. Polar explorer Captain Donald MacMillan introduced the program telling of the comfort that radio brought his crew on Arctic expeditions.

RADIO FANS - - -

–here's the good news you've been waiting for

The above advertisement surely speaks volumes for radio reception. It is in keeping with the RCA policies, and will primarily benefit the vast army of listeners all over the continent. It will especially benefit those within 500 miles of Des Moines, for arrangements have been made for station WHO at Des Moines to broadcast the WEAF programs on Wednesday evenings.

If you do not have a Radio in your home, or if you are not satisfied with your present set, get in touch with your authorized RADIOLA dealer. Let him demonstrate the merits of this wonderful instrument. He will demonstrate the RADIOLA right in your own home, where you can best judge its performance. Take full advantage of these and the many other good programs.

Tune in KOIL—Council Bluffs, Ia.

Station KOIL will broadcast the complete WEAF program this Wednesday evening, September 15th—from 7:30 to midnight. Drop them a card, send them a wire, call them on the phone—anything to let them know you appreciate their wonderful programs.

The McGraw Co

SIOUX CITY OMAHA ST. LOUIS

"The leading Radio Wholesale House in the Middle West"

September 14, 1926 McGraw Electric newspaper ad promoting the NBC test program from New York to be carried on KOIL. (Radio was initially promoted by radio manufacturers and distributors. Stations and program sponsors buying ads for their own promotion didn't begin until the mid-1930s.) (Courtesy Omaha World-Herald).

The program from New York thrilled listeners in the Midwest, especially those using crystal sets. It could be heard in Omaha over both KOIL Council Bluffs and WHO Des Moines. KOIL received some criticism for coming on the air during this, its regularly scheduled silent night, but most complaints were about the local announcer's frequent breaking in with mentions of Mona Oil.

NBC formally debuted on November 15, 1926 but ironically Omaha was left out. The nearest affiliate was WDAF Kansas City. When the network split into NBC Red and NBC Blue at the start of the following year, Omaha was still without a network. WOW would finally pick up NBC's Red and Blue in September 1927 while KOIL would become a CBS station two weeks later.

In February 1927 the Federal Radio Commission was formed and immediately took control of the nation's airwaves. As Charles Lindberg was making headlines with his flight to Paris, wave jumpers were being "spanked," assigned to a newly created "radio graveyard" of 200 to 300 meters (1000 kHz to 1500 kHz). These higher frequencies had less ground wave coverage and more stations could be squeezed in; not a favorable situation for those assigned there.

KOIL was returned to its original 277.6 meters/1080 kHz, with 1500 watts (June 15, 1927). Manager Don Searle put a positive spin on the assignment in what appeared an effort to not upset the FRC any further. He then petitioned the FRC for a better channel saying the station's expenses were $36 thousand per year with 16 to 18 full-time employees (*OWH* Aug 18, 1927).

Meanwhile, Henry Field at nearby KFNF Shenandoah complained about being placed too close to KOIL with his lowly 500-watt station being assigned to 270.1 meters/1110 kHz, a problem compounded several months later when KOIL on 1080 was authorized a higher power of 4000 watts daytime, 2000 watts nights (RSB June 1927).

It was while on 1080 kHz that KOIL became the westernmost station for the fledgling Columbia Phonographic Broadcasting System, later to become CBS. The network's inaugural broadcast September 18, 1927 from flagship station WOR in Newark, New Jersey had just 15 affiliates. The live orchestra broadcast that evening was the launch of ten weekly hours of programming from the network.

But, by the end of the year the new network ran out of money. Commercial sales couldn't keep pace with the expense of paying for performers, AT&T land lines, and the 500 dollars a week to each affiliate.

In early 1928 the network was sold to a partner and to affiliate WCAU. They brought in William Paley who had been running the marketing at his family's cigar company in Philadelphia. Paley was already a believer in radio having seen improved cigar sales from his advertising on the network. Taking over, he began a slow turnaround for the network, starting by renaming it CBS. He was the sole owner by September.

KOIL kept its affiliation with CBS though program offerings were spotty until the network was on a more solid footing by 1929.

Shortly after joining the Columbia chain, KOIL's dial position was moved again. The FRC was turning its attention to forming 40 clear channels for high-power stations.

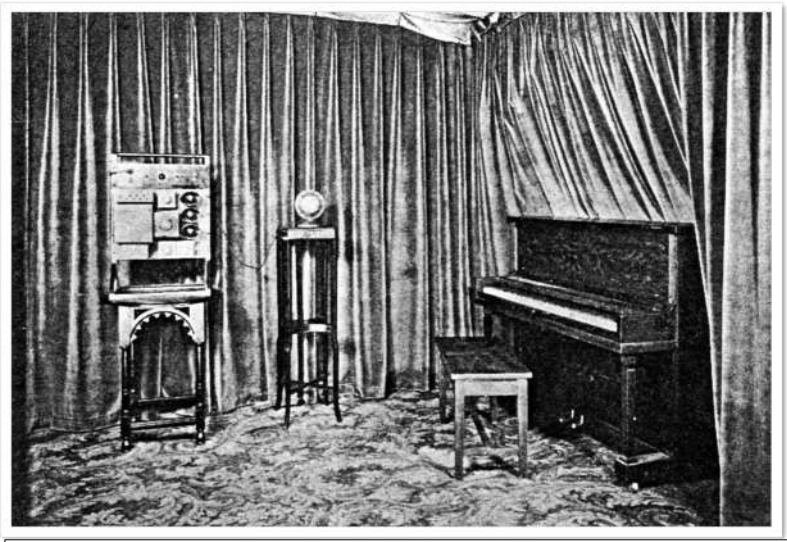
It was a mixed blessing for KOIL. The reassignment to 284.4 meters/940 kHz was a better frequency. Additionally, the station was allowed a power increase to 5000 watts. On the downside, Lincoln's KFAB was also assigned 5000 watts at 940 kHz, and the two stations were to divide air time.

Management at the two stations worked out a schedule where they would alternate blocks of hours during the broadcast day and evening hours. The move took effect on December 1, 1927.

On its newest frequency, KOIL 940 was one of three radio stations consistently received in the Arctic Circle by the McMillan Arctic expedition in June 1928. Dr. E. K. Lanford was an Omaha member of the expedition. He sent radiograms reporting KOIL along with two Chicago stations being received with regularity. Lanford's mother was an Omaha resident and was invited by KOIL to send a message to her son who was icebound north of Labrador. Her message aired February 29, 1928.

KOIL was again moved in September 1928, no longer having to divide air time with KFAB Lincoln. Its new dial position was 1260 kHz with power reduced from 5000 watts to 1000 watts. Daytime power was upped to 2500 watts early in the following year (RSB February 1929).

The slow transition to becoming an Omaha station was underway before the decade was out. Omaha and Council Bluffs are perceived as a single market. KOIL as early as 1926 began a dual-city legal ID with its hourly, "KOIL Council Bluffs-Omaha."



KOIL's remote studio in the Fontenelle Hotel. Equipment to the left of the pedestal microphone sends the program via phone lines to the Council Bluffs hilltop studio.

KOIL's physical presence in the larger city was established with the construction of a remote studio across the river at the plush Fontenelle Hotel in 1928.

The Fontenelle at 18th and Douglas Streets, built in 1914, was quite upscale and an image builder for KOIL. A small Omaha studio was constructed for supplemental programming (*OWH* Nov 9, 1928).

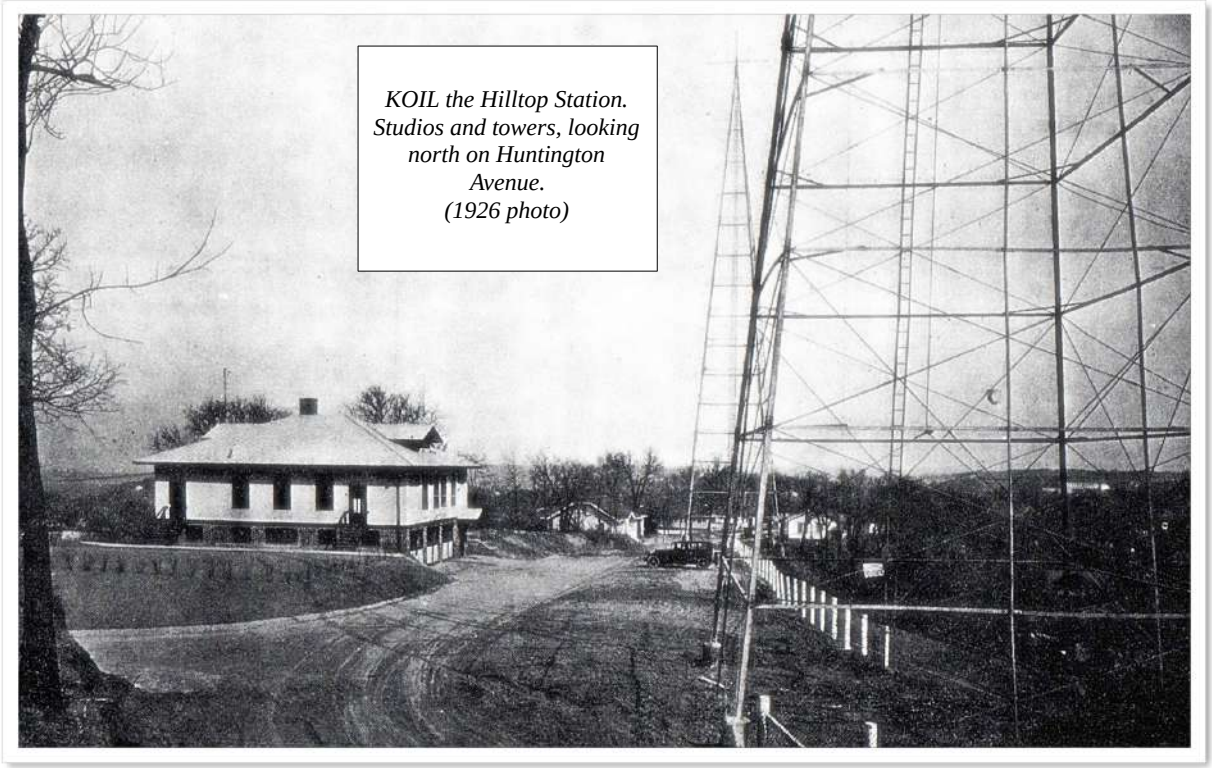
The studio was in the hotel's lower lobby with a separate entrance from 18th Street. The room was draped in velour for soundproofing. It held an upright piano. The pedestal mic stood near a table holding the amplifier that would send the program by phone lines to the Hilltop Studio and transmitter.

From downtown Omaha "for the convenience of Omaha artists," the station aired regular broadcasts that included dinner music by Randall's Royal Fontenelle Orchestra straight from the hotel's main dining room.

(The Late Gothic Revival style Fontenelle Hotel remained successful into the 1960s but was closed in 1970 as Omaha expanded westward. It was demolished in 1983. The Roman L. Hruska Federal Courthouse now occupies the site.)

KOIL 1260 went on to become a successful network outlet in Omaha while also producing popular local and national programs during radio's Golden Years of the 1930s and 1940s.

After that, KOIL enjoyed two decades of huge money-making success as a Top 40 station.



KOIL the Hilltop Station. Studios and towers, looking north on Huntington Avenue. (1926 photo)

RADIO'S ROARING TWENTIES CHAPTER ENDS

By the end of the 1920s as broadcasting technology and regulations continued to quickly grow, there were even some stations attempting to use the newly discovered short waves for hoped-for international markets.

On the technical side, vacuum tubes became the standard for both receiving and transmitting. Spark transmitters and crystal set receivers were all but gone. Receivers were now of the superheterodyne design, highly sensitive with easy tuning. Continuous wave transmitters replaced the broad and unwieldy spark transmissions. The only spark transmitters left in service by 1929 were "legacy" installations on naval vessels.

As for programming, the national networks were developing and the Depression set the stage for the success of "free entertainment" provided by radio. Radio's Golden Years of the 1930s were right around the corner.

CLOSE-UPS and TECHNICAL

STATION CALL LETTERS ORIGINATION

The Mississippi River is the dividing point for assigning K and W call letter prefixes, with K calls on the west side and W on the east. This was designated in 1923.

Before then, the east and west dividing point was generally the tier of states from North Dakota south to Texas plus those bordering the east side of those states to the Mississippi River. This accounts for these states having some W calls grandfathered in, notably WOW Omaha, WJAG Norfolk, WNAX Yankton, WHB Kansas City, and WHO Des Moines.

Three-letter calls were initially assigned to ships but reassigned to land stations as ships were being decommissioned and giving them up. WOW gained its call letters from the *Henry J. Bibble*.

Four-letter calls were begun in 1922 but three-letter calls continued to be assigned upon request until 1930. Exceptions were made starting in 1953 for FM and TV stations. WOW 590 was allowed to use its calls for sister stations WOW-TV and WOW-FM.

Experimental stations, and later amateur and shortwave stations, were given call signs with a number to immediately follow the W or K prefix, the number corresponding to the district number in which the country was divided by the FCC. There were nine districts, with Nebraska and Iowa at the time within District 9.

In August 1939 The FCC ended the district number in calls for experimental and shortwave broadcasters, though not for amateurs. Boundaries have been redrawn since then and much of the Upper Midwest including Nebraska and Iowa is now in a tenth district, denoted as Zero.

COMMERCIAL BROADCAST TRANSMITTERS

Early transmitters were hand-built by amateurs or those trained in the military. The first commercially built transmitters arrived in 1921 manufactured by Western Electric. Thirty units were sold in the first year. In Omaha, WOAW was the first Omaha station to order a commercial transmitter, a 500-watt unit manufactured and delivered by Western Electric in 1922.

Other manufacturers were slow to follow. Westinghouse Electric made transmitters for its own stations. Its first transmitter was a 100-watt unit for KDKA, soon running 10-thousand watts in 1923 and 40-thousand watts in 1925. Its other stations were KYW Chicago, WBZ Springfield, and WJZ Newark, N. J

For a time Westinghouse, like the John Wanamaker store in Philadelphia, used its broadcast stations after hours for inter-plant communications, but this was discontinued when the Secretary of Commerce objected.

General Electric had been manufacturing transmitters for the military and modified three of them for its own radio stations, WGY Schenectady, KOA Denver, and KGO Oakland, California.

Though long involved in the communications business, RCA marketed some tubes and parts for broadcast stations, but no transmitters all through the 1920s. Even then, all of RCA's product was made by Westinghouse and GE, the two companies that founded RCA in 1919. RCA began its own manufacturing and selling of transmitters in 1930 after buying the Victor Talking Machine Company plant in Camden, New Jersey.

THE FEDERAL RADIO COMMISSION 1927-1934

Radio's evolution to broadcasting was swift but initially without much oversight. When regulation was first addressed in the Radio Act of 1912, broadcasting was unforeseen and not even mentioned.

The Secretary of Commerce and Labor was modestly tasked with radio regulation through the Wireless Ship Act of 1910. The Radio Act of 1912 tried to add some order by licensing transmitters and operators, and to regulate operations in order to minimize interference. It also called for giving preference to distress signals, illustrating its focus on oceanic communication resulting from the *Titanic* disaster.

As broadcasting emerged in the early 1920s, new licensees vied for space on the limited frequency allocations creating a headache for Secretary of Commerce Herbert Hoover. He convened four National Radio Conferences over his tenure seeking cooperation from all interested parties.

Hoover leaned toward broadcasters' self-regulation. But working against Hoover, besides those dissatisfied with his vague efforts, was a 1923 federal appeals court ruling that he did not have the discretionary power to withhold licenses from qualified applicants. An explosion of licensees followed, many just for the novelty or at best with unclear goals as to what exactly to air and how to pay for it.

Between 1923 and 1924 Hoover expanded the number of frequencies assigned to broadcasting and even had some success persuading stations to share frequencies, limit power, and split the broadcast day.

But it wasn't enough. On April 16, 1926, the Court dealt the final blow to the 1912 Act when it ruled that the Secretary had overstepped his authority in licensing and controlling broadcast radio.

Anarchy broke out on the radio broadcast band. Stations switched frequencies on their own in an effort to be heard more widely. Powers were increased, time-sharing schedules abandoned, all creating chaos on the band. Radio listeners suffered.

To keep perspective, it's notable that not all stations took part in the chaos. The now-toothless Commerce Department still kept records, reporting that of the 650 stations on the air at year's end, about 100 had jumped frequencies and 120 and had increased power. Also, 150 of the total were unlicensed newbies signing on since the court ruling.

Order was restored with the Radio Act of 1927 dealing specifically with broadcasting for the first time. A framework for broadcast oversight and a regulatory policy for broadcasting was established:

1. The number of stations was reduced. "Non-essential" broadcasters were removed from the air. Of 732 stations, 164 were targeted for deletion. Lawsuits followed, but only 17 stations won in court, one of them being KICK 1420 in Red Oak, Iowa. KICK later moved to Carter Lake, Iowa, serving the Omaha market for just over a year in 1933.
2. Portable stations were disallowed. These mobile stations had been authorized to broadcast from almost anywhere in its region, usually from state fairs and expositions. They were gone by 1928.
3. High power equality was sought across the U.S. High powered stations had been concentrated in the nation's biggest cities, leaving out Mid-America.
4. Frequencies would be assigned to all stations, many having to share time on one channel, though the problem of time sharing would soon become an issue resulting in further moves.

It became clear that the best frequencies on the lower end of the band with better coverage were being assigned to those stations that did not join in the wave-jumping spree, the remainder being "punished" by being sent to the higher end of the band.

Stations taking turns on shared frequencies made for listener confusion, and especially was a problem for advertisers and national networks wanting full day market coverage. Before the problem was solved, networks in some cities had to sign with multiple stations just to satisfactorily cover one market.

By this time radio station transmitters were becoming more reliable and stations began lengthening broadcasting hours which only added to the problem of trying to split broadcast schedules.

The FRC immediately set out to reduce time sharing. This involved moving stations around to different dial positions again, often multiple times within a period of months before things settled down. Besides creating more listener confusion, these changes were an expense to broadcasters, sometimes involving the reconstruction of antennas, and in some cases, even new transmitters.

The new FRC placed three-fourths of the country's stations below 300 meters into what some called a crowded graveyard of frequencies dedicated to chaos. On the AM radio dial, this region was on the upper end of the band, 1000 to 1500 kHz. (Frequency and wavelength are inversely proportional.)

The new wavelengths took effect on Wednesday, June 15, 1927. Interference was reduced, and though static was fairly heavy that night, Omaha listeners no longer had difficulty in hearing such stations as KDKA Pittsburgh, KYW Chicago, WLW Cincinnati, WTAM Cleveland, WDAF Kansas City, WCCO Minneapolis, WHO Des Moines, and WLS Chicago, among others.

KOIL Council Bluffs was sent back to 1080 kHz. In Omaha, WOW and WAAW were both moved upward a short distance on the dial, WOW from 570 to 590, and WAAW from 780 to 800. Lincoln's KFAB slightly lost some coverage despite its good behavior in the free-for-all, going to 970 from 880. The high school stations KOCH and KFOX and Rockwell's WNAL were placed on 1160 kHz and ordered to share time.

All of these moves would prove very temporary; the FRC was just getting started. In its effort to establish more clear channels for long distance reception, the Commission selected 25 channels to be cleared, each in favor of a single, long-distance station, the list completed by December 1 (*OWH* November 20, 1927).

This list of cleared channels saw the move of three Omaha area signals: KFAB Lincoln and KOIL Council Bluffs were sent to share time on 940 kHz, while WAAW went to 680 with operation still restricted to daytime only, 6 a.m. to 6 p.m. Nearby in Iowa, KICK in Atlantic was to share time with WIAS Ottumwa on 930 kHz, both restricted to daytime only.

Later, in 1928, the FRC began a winnowing process with a list of stations to eliminate from the band. The list included nine of Nebraska's 17 stations and 10 of Iowa's 25 stations. Owners were given a chance to convince the commission in July 9 hearings that it would be in the public interest to allow them to continue operation.

In Omaha, it was the end for KFOX, KOCH, and WNAL leaving 1160 kHz and making it a clear channel for Salt Lake City (*OWH* May 28, 1928).

KICK, by this time in Red Oak, Iowa was also on the elimination list, but appealed and succeeded in staying on the air. KICK would become an Omaha station in the following decade, moving its license to neighboring Carter Lake, Iowa for just over one year.

There was one final change to come. In September 1928 the FRC issued General Order 40, classifying channels as Clear, Regional, and Local. Canada was included in the plan.

This plan formed 40 clear channels. It would allow 53 stations to operate interference-free with high-power at night. KFAB on 770 kHz was one of them, allowed 5 thousand watts but having to divide time with WBBM/WJBT Chicago at night. With this, KOIL, which had been sharing time on 940 with KFAB, was moved to a regional channel going to 1260 kHz with its power reduced from five-thousand to one-thousand watts.

WOW also had a setback, ordered to share time on its channel of 590 with WJAG Norfolk and WCAJ, the Nebraska Wesleyan University station in Lincoln. A month later WJAG was given 1060 kHz for itself and was allowed 500 watts with plans for an increase to 1000 watts (*OWH* Oct 17, 1928). This left WOW with only WCAJ sharing the frequency, the Lincoln station getting 1/7 (3 hours) of the broadcast day.

WAAW as a daytimer was moved from 680 to 660 kHz, a clear channel at night belonging to New York City's WEAF, the flagship station for NBC Red.

The new frequencies took effect in November 1928. Finally, the FRC was done with its restructuring of the AM radio band. General Order 40's plan remained in effect until the 1941 frequency adjustments which in turn remained in place until the 1981 Rio Agreement breaking up the clear channels.

THE PORTABLE STATIONS OF THE TWENTIES

Commercialization was just arriving and not everybody had a radio and very few towns had a local station. So, how to use the novelty of radio to promote products and even radio itself? By having the station hit the road for special appearances in different cities and towns.

Interest in portable broadcasting took root in 1922 when the Commerce Department began issuing special temporary licenses for portable use allowing stations to move from site to site. In the United States, there were at least 70 "temporary" broadcast station authorizations issued beginning that year.

Portables could be used for appearances at fairs and festivals. But even bigger was loading transmitting and studio equipment into a train car, riding the rails, and setting up at small outlying towns or at special events. Most stations were low power, 10 to 50 watts. The arrival of a portable radio station generated enormous publicity.

After several years the novelty wore off, the band became more crowded, and portables just added to the chaos. Portable stations were told to find a fixed home in 1928 when the practice was discontinued by the FRC.

There were four Omaha Special Temporary Licenses issued, all but three in 1925. Though licensed to Omaha, these stations were placed into operation at various locations elsewhere.

KFVP 1925 Omaha Chamber of Commerce.

The Omaha Chamber of Commerce took to the rails with radio for two weeks in May 1925 to promote the city. The twenty-seventh annual trade tour of the Omaha Chamber of Commerce operated "America's only broadcasting station on a passenger train" at stops along the way as it traveled through Nebraska, South Dakota and Wyoming.

KFVP set out for the West making its first stop with its 100 watt transmitter in Hot Springs, South Dakota May 11 (its license duration was May 10 to 24). At each stop, power was tapped and the station signed on at 275 meters/1090 kHz promoting the virtues of business in Omaha.

At its conclusion date, the station license and frequency were taken over for five more days by the Sioux Falls Chamber of Commerce. (*OWH* 5/20/1925)

KUPR 1925 Union Pacific Railroad

The most ambitious portable station was operated by Union Pacific in the summer of 1925. The railroad, headquartered at 1416 Dodge Street, received a Temporary Broadcast Station grant for a portable station on a moving train for “45 days from Aug 12.” The station, KUPR on 1110 kHz, was constructed on a 70-foot steel baggage car at a cost of six thousand dollars.

Equipment was supplied and installed by McGraw Electric of Omaha. WAAW’s Harold Hosford oversaw the installation design. On the tour, the equipment was operated by F. P. Durand, the radio instructor at Technical High School (*OWH* 8/23/1925).

KUPR ran 100 watts on 270 meters/1110 kHz. Its studio was in the rear observation and business car. It had a piano supplied by Hospe Music for evening entertainment programs. A one-thousand-foot microphone extension permitted pickups from outside the rail car, reaching into railroad stations, nearby farm dwellings, even into the town.

Unlike other portable stations, KUPR's power was self-supplied with a one-thousand volt generator on board (*OWH* June 28, 1925). Theoretically, the station could operate while in motion, but likely never did. Its 40-foot antenna on top of the car was collapsible for travel, and with numerous stops on the itinerary, in-motion broadcasting would not be convenient or even necessary.

The tour was called the *Calf Clubs Special*, "in the interest of better cattle." The experts, along with five cows for use in demonstrations and lectures, were passengers on the trip (*OWH* Oct 24, 1925).

KUPR's eleven-car train traveled from Lincoln as far west as Gering in the Nebraska panhandle for a tour of the chiefly agricultural sections of Nebraska, offering lectures by these dairy, farm, and stock experts each day plus airing various talent found in towns along the way. The tour concluded September 4th at the state fair in Lincoln (*OWH* Aug 22, 1925).

KFQV 1924 Omaha Grain Exchange

The Omaha Grain Exchange received a portable station license in July 1924. It's listed as KFQV, licensed to operate on 231 meters/1300 kHz with 100 watts.

The Grain Exchange already owned WAAW, operating for three years from its building at 19th and Harney. However, on 286 meters/ 1050 kHz, the WAAW 500-watt signal had difficulty reaching western Nebraska during its daytime-only schedule. It's possible the portable station license was intended as a contingency plan to reach outstate listeners.

For months during this time, WAAW had been applying for a better frequency. Approval finally came in February 1925 when WAAW was authorized 384.4 meters/780 kHz. The KFQV license had been deleted the previous month, in January 1925.

With WAAW's now-improved coverage, a portable station was not needed, if indeed that was management's plan to better reach rural Nebraska. No mention of KFQV's operation can be found. It appears unlikely that this portable station license was ever put to use.

KGIF 1928 R. B. Howell

Omaha's pioneer broadcaster, R.B. Howell, was authorized a portable 7.5-watt station for 1380 kHz in 1928 (RSB Aug 1928). Howell, Omaha's first licensed broadcaster, had placed WOU on the air in 1921. By the time he licensed KGIF, he had been a U. S. Senator in Washington for five years. The station address was listed as 811 Omaha National Bank Building.

KGIF was short-lived, deleted just months later in 1929 (RSB May 1929). Howell's intent with the station, if indeed it ever reached the air, is lost to history. Best speculation is that he wanted it for campaigning throughout the state.

KFOR - LINCOLN'S OTHER HISTORIC STATION

Of the original Lincoln stations from 1923 and 1924, the university stations WCAJ and WFAV couldn't compete with commercial broadcasters. Except for KFAB, the remaining Lincoln licensees were all short term, finding the new medium's evolution moving so fast only the truly serious would survive.

KFAB was joined by KFOR in 1927. KFOR moved into Lincoln from David City, about 40 miles northwest of Lincoln. Later, KFAB moved to Omaha in the 1940s leaving KFOR as the city's heritage station.

KFOR began when David City's first station left the air. WRAR had signed on in 1923 with 20 watts on 1330kHz/ 220 meters. The owner was Jacob Carl Thomas who ran J. C. Thomas Radio & Sound Equipment at 361 Fourth Street. Thomas was one of many who briefly held a broadcast license and station as a novelty and/or a device to demonstrate radio receivers. Records indicate the WRAR license was deleted in October 1923.

Before long David City Tire and Electric snapped up the frequency and signed KFOR on to the air in 1924. Those call letters are still displayed in the tiled facade of its old building at 343 North 5th Street in David City.

Power was increased to 100 watts by 1926. A year later KFOR made its move to Lincoln, permitted by a frequency shift to 226 meters, about 1380 kHz. Later in the year manager and partner Howard Shuman bought the station from David City Tire & Electric (RSB Aug 1927). Shuman was an accomplished engineer, having built his first transmitter in 1914.

Howard Shuman
(ca. 1950s photo)

KFOR's dial position shifted again during the FRC's restructuring in 1928, to 217 meters, or about 1210 kHz. Shuman then sought upgrades for KFOR, applying for 1120 kHz with 500 watts in 1929, and a year later trying for 930 kHz with a kilowatt days, 500 watts nights. Both applications were denied and KFOR remained on 1210 where he was at least permitted a power increase to 250 watts days, 100 watts at night (RSB June 1929)

Shuman sold KFOR and its Cornbelt Broadcasting ownership moniker to Union Holding in 1932, a company that already owned KFAB in Lincoln thus forming the region's first duopoly. Union Holding would add Council Bluff's KOIL to its stable the following year. (Union Holding later formed Central States Broadcasting System as a subsidiary to run its three stations.)

In 1938 KFOR sought a move to 1450 kHz with a directional array running 5-thousand watts daytime, 1-thousand watts nights. The application was denied.

In the early 1940s when duopolies were outlawed, KFOR was sold to James Stuart who formed Stuart Broadcasting. Shuman, meanwhile, continued to build transmitters and provide his engineering skills for other stations. He founded another Lincoln station in 1949 in a dispute with Stuart, KLMS on 1480.

KFOR was moved to present-day 1240 during the NARBA frequency shifts of 1941.

KFNF and KMA - THE SHENANDOAH STATIONS - THE LUCRATIVE YEARS

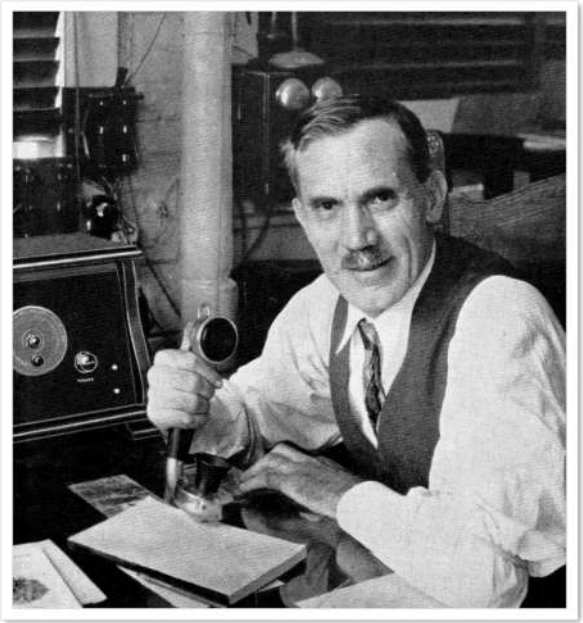
Iowa has its share of pioneer stations, but none so unique as the two that grew out of separate seed and nursery companies in Shenandoah. Their connections to Omaha and service to the region ensures them a mention in Omaha's radio history.

Broadcasters found a way to monetize their operations in the early 1920s by entrepreneurs offering advice to listeners over the air in what can best be described as the world's first infomercials.

Some product was of the snake oil variety, such as medical cures promised by J. R. Brinkly over his station KFKB in Milford, Kansas signing on in 1923, and by Norman Baker with his KTNT in Muscatine, Iowa two years later in 1925. After legitimate programs of local talent, lectures, and church services aired on the stations, hawking to the gullible began at nightfall when the signals skipped out covering large swaths of American real estate. Brinkly and Baker were soon banished to hawk their wares on the Mexican border blaster stations.

But honest businessmen were more common, working the advantage of radio's reach. Two of them were in Shenandoah, Iowa, about 60 miles south-southeast of Omaha. With a population of five thousand, Shenandoah was the largest community in the rural reaches of Southwest Iowa. Nearly a dozen seed companies dotted the region, and two were right there in town.

The oldest seed company was owned by Henry Field, a farmer who started the business under his own name in 1899. The other was owned by Earl May, a Nebraska boy who fell into the business after marrying a Shenandoah girl and buying a nursery there in 1919 making it the Earl May Seed and Nursery Company. A radio rivalry between the two men developed when they discovered the power of the medium while entertaining on Omaha's WOAW.



KMA's Earl May and KFNF's Frank Field at their mic.s

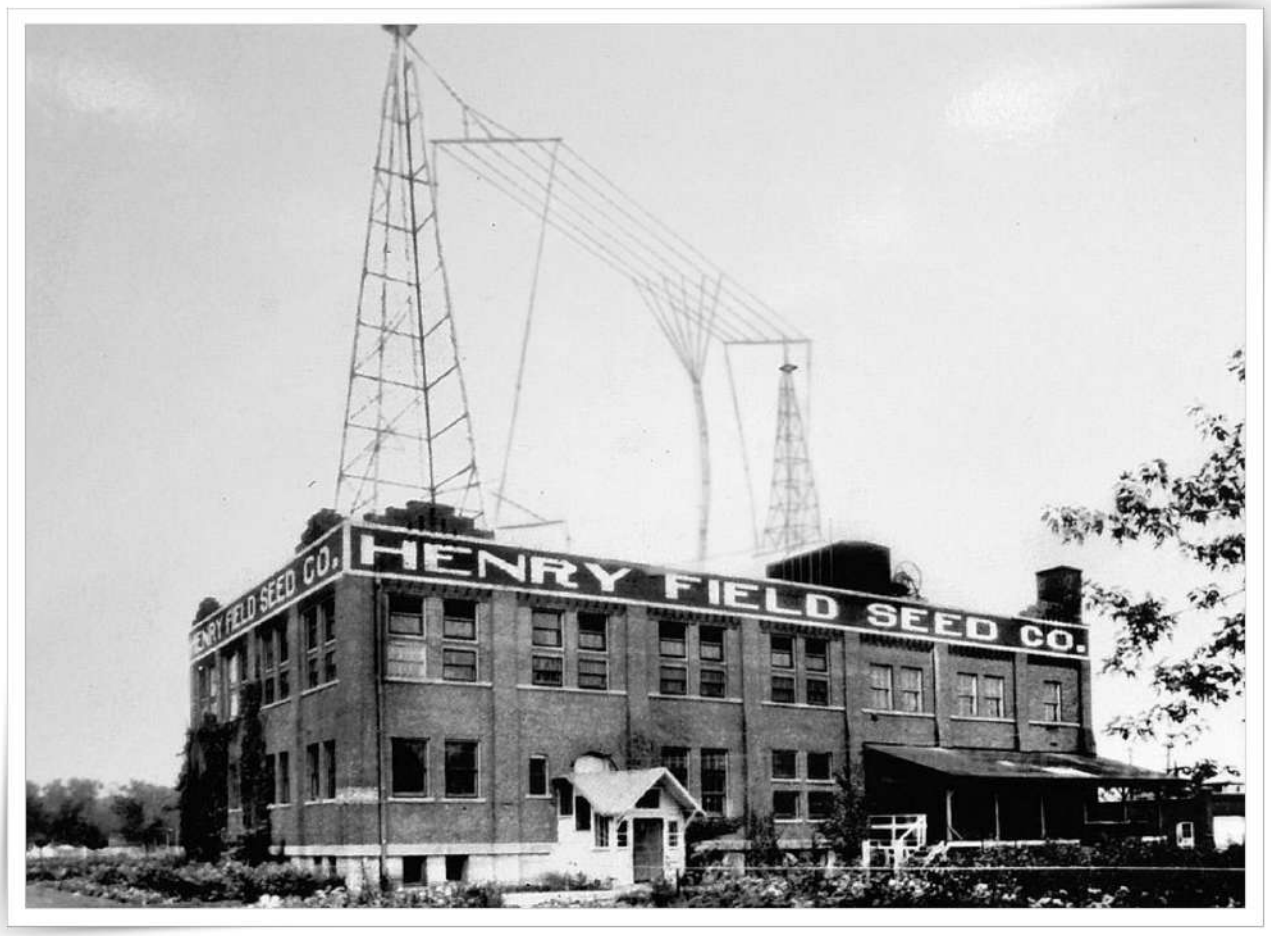
In radio's dawning days recordings were eschewed and live talent filled the schedule. Live talent from anywhere would do. The denizens of Shenandoah would join the talent pool by forming small groups of musicians, singers, and speakers, then set up occasional treks over the dirt roads to the Omaha studios of WOAW high atop the Woodmen Building.

It was on WOAW starting in September 1923 that the talent from Shenandoah would include Henry Field and some of his seed house employees. Music, hymns, and talks filled the blocks of airtime. Field would extol the virtues of Shenandoah.

Field enjoyed the audience interaction, sending his seed catalogs to all who wrote in, converting listeners into customers.

Earl May took note and in early 1924 started his own monthly two-hour entertainment show Wednesday evenings on WOAW, often rewarding his traveling troupe with a steak dinner at King Fong's on 16th Street in downtown Omaha.

It was clear to Henry Field that having his own full-time station could be a key to riches. He launched his station from his nursery's three-story brick building on the north side of Shenandoah using windmill parts for the towers.



KFNF rising from the Henry Field Seed Company building in 1924.

KFNF signed on in February 1924 with 500 watts on 260 meters/1150 kHz (RSB March 1924) (RSB Jan 1925 indicates 1130 kHz). The station was moved to 1140 kHz in late 1925 (RSB December 1925) and got a power increase to 1000 watts early the following year (RSB Feb 1926).

Programming was aimed at the people Field knew and understood: farmers and small-town folk. One of his station's slogans was *The Friendly Station*.

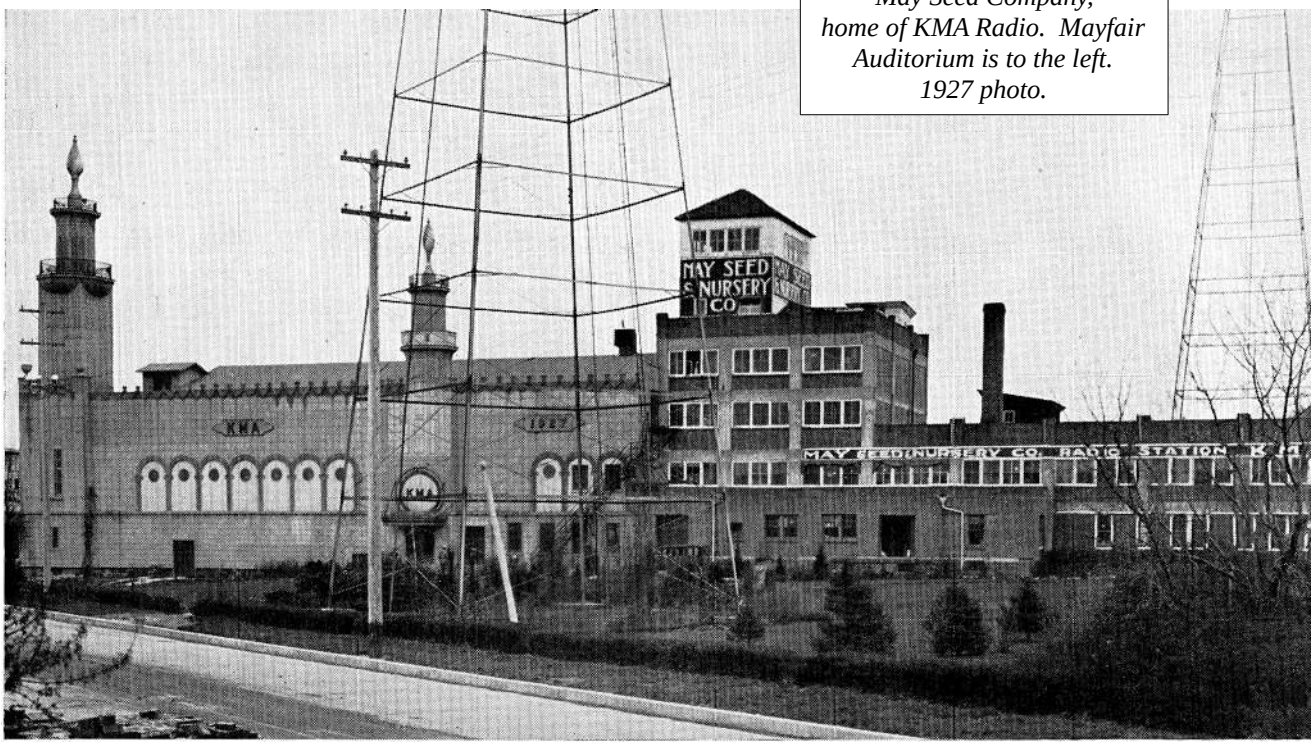
Earl May's response was to double his airtime on WOAW. He soon ordered a 60-mile audio line to WOAW installed so that he could broadcast without making the dusty and sometimes quite muddy trip to Omaha and back. The studio was set up on his seed house second floor, equipped with two microphones, a piano, and plush furniture. The line went live September 4, 1924.

WOAW requested more hours of programming from the Shenandoah studios, but May could see he needed a station of his own. Henry Field was doubling his business with his station.

By spring 1925 May Seed and Nursery Co. received its license and construction began. A pair of 150-foot towers were built to support the antenna, one tower rising from the seed house roof. The studio was already in place, that which was constructed to feed WOAW.

KMA officially launched on September 1, 1925, with 500 watts on 1190 kHz. The channel was shared with a 50-watt Le Mars college station that operated only once a week.

Like KFNF, programming was directed to the rural audience. A contest for a station slogan came up with a winner selected by Earl May, *The Cornbelt Station in the Heart of the Nation*. Another slogan contest in February 1926 came up with *Keeps Millions Advised*. Out of four thousand entries vying for the 50-dollar cash prize, the winner was an Omaha listener.



May Seed Company, home of KMA Radio. Mayfair Auditorium is to the left. 1927 photo.

(As a side note, a third company very well could have joined the seed house broadcasters of Southwest Iowa. In September 1925 the A. A. Berry Seed company of Clarinda announced the purchase of a 500-watt transmitter from WHO Des Moines. It was licensed the following month as KSO Clarinda, assigned to 241.8 meters/1240 kHz [RSB December 1925]. Though only 20 miles east of Shenandoah, the Clarinda station never engaged the competitive Shenandoah broadcasters and instead later moved to Des Moines.)

1925, May's Shenandoah studio. Initially constructed for use over WOAW Omaha, it became KMA's studio upon that station's sign on. Earl May at the mic.

At night both KMA and KFNF cast nighttime signals far beyond the rural areas in all directions. From this central US location the two stations became famous coast to coast, even getting some letters from overseas.

Though it sometimes appeared that May was a follower with Henry Field in the lead, he made some pioneering moves of his own. May kept his line to WOAW as a link to air occasional special events from the Omaha station, making it one of the first local networks in the country.

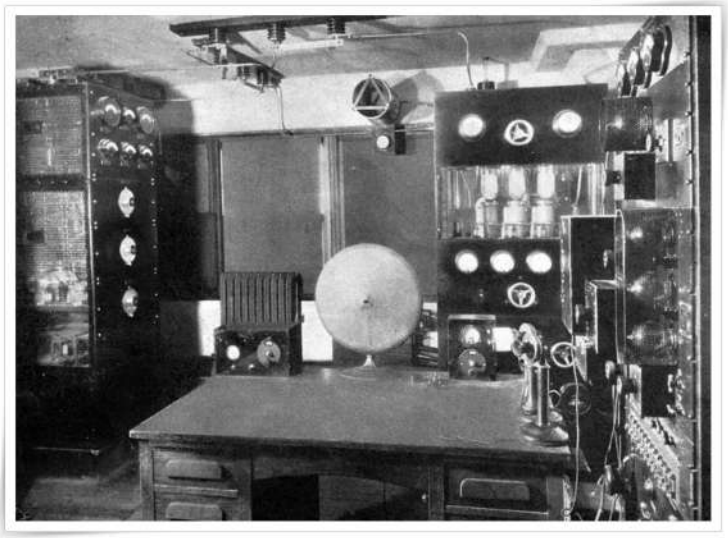
KMA also endeared itself even further to the farming community by signing on before dawn with a regular schedule for the rural audience, the country's first station to do so by some accounts. This was the result of Earl May seeing so many farmhouse lights burning during those dark, early morning treks to Omaha (October 1925).

For the rest of the decade, the two stations roared through the Twenties becoming cash cows, making the two nurseries famous and quite lucrative.

The advertising was kept indirect. Commercialism was a gray area and frowned upon at the time, so running contests and special offers was the popular way to commercially interact with the audience.

All mail was answered with seed catalogs and a mail-order business was born. Before long the catalogs included canned and dried fruits, live chicks, radios and radio tubes, and even automobile tires.

As the nurseries' thriving mail order business exploded, the two stations made up well over half of Shenandoah's postal receipts. Foot traffic also increased and the two stations became tourist attractions, particularly after paved roads reached Shenandoah.



KMA transmitter room, 1927.

KFNF Transmitter Room, 1927.

Live talent paraded in front of the microphones, some groups working a product name into their acts or into their own names as a way of getting a commercial plug on the air. Others were presented "through the auspices of" a named supporter.

Both May and Field were personable and chatty on the air sharing their knowledge of farming and gardening. Field's twice-daily *Letter Basket* show quickly became a staple, answering horticulture questions and increasing the catalog mailing list.

Talks on "domestic science" such as cooking and recipes became forerunners to the radio homemaker shows that blossomed in the 1930s. KMA's Jessie Young and her *Stitch and Chat Club* in 1926 soon morphed into *A Visit With Jessie Young*, arguably the region's first identifiable homemaker program.

On KFNF Leanna Field Driftmeir (one of Henry Field's four sisters) began her own show in the late 1920s called *Kitchen Klatter*, the name resulting from an on-air contest won by an Omaha homemaker.

Musically, KFNF became known for gospel tunes and fiddling contests. As for personalities, Field and May were top winners in national popularity contests run by *Radio Digest* in the mid-1920s

Then came the auditoriums. To accommodate guests and traveling talent, each station constructed new studio auditoriums designed for large audiences. The two facilities rivaled the Omaha stations, comparing favorably to KOIL's built-for-radio home in Council Bluffs and WOAW's 19h floor studio atop the Woodmen of the World Building.

Henry Field was first, building a showcase studio auditorium adjoining his nursery. The KFNF theater-style studio opened in 1927 and Field showcased it on the cover of the spring seed catalog. It was a single-story Spanish stucco building that included a dining room and kitchen. The auditorium provided seating behind a huge sheet of plate glass that helped sound-proof the stage

Field Seed Company Show Gardens
with KFNF auditorium-studios between the towers, 1927

Earl May followed suit within weeks with a larger facility he called Mayfair. It was in a Moorish motif with two minaret towers. The auditorium could seat one thousand people and had blue electric lights in the ceiling simulating a starry night. Many evenings the auditorium was used as a movie theater.

A three-ton 7 by 22-foot sheet of glass was lowered between the stage and audience for broadcasts. At the time it was believed to be the largest sheet of glass ever made. The glass was to soundproof the audience from the performers. Audience interaction wasn't discovered to be beneficial to live performances until around the mid-1930s.

Both stations began listener appreciation promotions that attracted thousands and soon became annual events for a number of years. Earl May's *KMA Radio Jubilee* started in May 1925 with the station staying on the air for 3 days straight.

The first KFNF event was a celebration of its two-year anniversary in February 1926 and drew 10 thousand to town. KFNF remained on for 36 hours during the event.

Soon KFNF held its *Jubilee* on the same weekend as KMA's which grew the events into a super festival each autumn featuring carnival rides and exhibits. Each station drew huge crowds to watch live radio broadcasts and eat free pancakes. It turned into an annual pancake feed that took place every year, even through the Depression years and up to the beginning of World War II.

KMA and KFNF Jubilee visitor buttons.

The only difficulties the stations faced during this period was the increasingly crowded radio band and more government regulation leading to shifting dial positions that lasted into the 1930s.

Herbert Hoover's Commerce Department was legally declared powerless by the summer of 1926. With no regulation, some stations began unilaterally moving to better frequencies, getting away from the clutter.

KMA and KFNF along with KOIL in Council Bluffs were among the first in the Midwest to appropriate new wavelengths. The two Shenandoah stations moved to 461 meters/650 kHz and divided air time (*OWH* July 19, 1926). KFNF then adjusted its frequency to 651 kHz to be on the high side of other stations on the channel.

When the Federal Radio Commission was formed in 1927 its first job was to rein in the "wave jumpers," and specifically cited as chief offenders KMA, KFNF, and KOIL. The two Shenandoah stations were punished by being sent to 1110 kHz (June 1, 1927) where the pair sheepishly shared time (RSB May 1927).

Henry Field, though with the higher power of 1000 watts to KMA's 500 watts, complained about being crowded by KOIL on 1080 and by another station in Ames, Iowa. (Radio receivers were not yet very selective and stations would occupy a broad portion of the dial centering on its dial position.)

After a year KFNF was returned to 650 kHz while KMA was authorized 760 with 1000 watts (RSB Aug 1927). Henry Field's KFNF later was permitted to increase its power to 2000 watts (RSB Dec 1927). The higher power was soon restricted to daytime hours 6 a.m. to 6 p.m. (RSB Jan 1928).

Meanwhile, on 760 kHz KMA had to share the frequency with KWKH Shreveport, Louisiana. This presented new problems as W. K. Henderson, the colorful KWKH owner, took to blasting May on the air believing that May wanted to take over his channel. His rants were well-heard in the Midwest. He even targeted Don Searle and KOIL because the Council Bluffs station had also wanted the channel before losing out to KMA.

The differences on the matter were worked out at FCC hearings and KMA was again moved, but still shortchanged. During the FRC restructuring in late 1928, KMA was assigned 930 kHz with 500 watts and required to share air time with KGBZ York, Nebraska. The daytime power was reinstated to 1000 watts by the start of 1929 (RSB Jan 1929).

More frequency changes were to come for the two Shenandoah stations in the 1930s. With an economic depression around the corner, the glory days of the Twenties were coming to an end.

OMAHA'S PIONEER RADIO ENGINEERS

Omaha produced its share of genius radio engineers during radio's early years. These young awestruck radio enthusiasts immersed themselves in the new technology and went on to make distinctive contributions to the industry. Most notable were Ronald J. Rockwell, Frank McIntosh, and William Kotera.

1959 photo of Ronald J. Rockwell and Frank McIntosh demonstrating Crosley Broadcasting's new broadcast transmission system for WLW Cincinnati, rated the cleanest and best performing in the country.

While Kotera remained in Omaha taking on new AM, FM, and television challenges during his career at WOW, McIntosh and Rockwell left to create stunning advances in audio technology and high power transmitters respectively.

Ronald Rockwell served as chief engineer for WOAW. This was after being credited for bringing Omaha its first broadcast station WNAL that had evolved from his amateur station 9VE airing music and weather reports as early as 1921.

Rockwell went on to study at Iowa State University where he assisted with the school's station WOI. Back home in Omaha he helped school instructor C. H. Thompson construct Central High School's station KFCZ in 1924. A year later he installed KOIL's 500-watt Western Electric transmitter and the generator to power it.

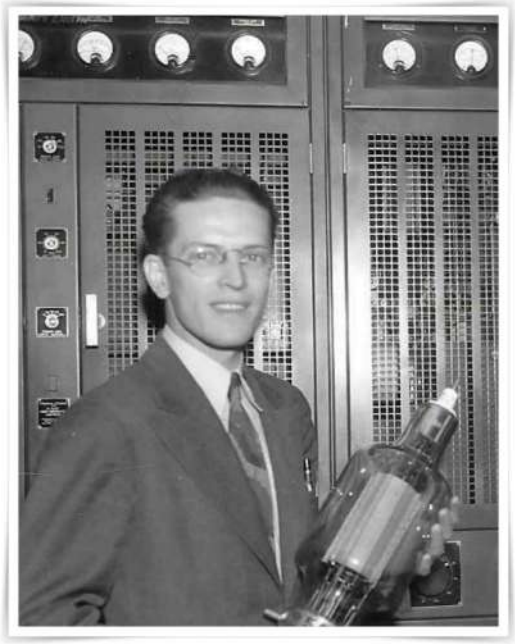
After college, Rockwell worked at the Bell Telephone Labs for a few years before joining the Crosley Corporation in Cincinnati in 1929.

Powell Crosley Jr. was called the Henry Ford of Radio, an innovative broadcaster who was always pushing the envelope. For a period of time he also built and marketed the Crosley automobile, a car that may have been ahead of its time due to its compact size.

Rockwell rose to Technician Supervisor at Crosley by 1936 designing new electronic circuitry and high power broadcasting transmitters. Crosley's WLW Cincinnati on 700 was authorized a whopping 500-thousand watts for a period of time in the 1930s.

During the war, Rockwell was placed in charge of designing and building 200-thousand watt transmitters for America's *Voice of America* shortwave plants in Ohio that he called his "pets." Rockwell would hold over 20 patents in his career.

In 1959 as VP of engineering at Crosley, Rockwell was credited with developing a WLW-AM broadcasting transmission system deemed to be be the cleanest and best performing in the country. Confirming that assessment after close scrutiny was another former Omaha WOAW engineer, Frank McIntosh, who by this time was a high-fidelity transmission expert in his own right. The WLW system was put into operation on January 19th.



Frank McIntosh at WOW.
1925 photo. (WOW Archives)

Frank McIntosh pursued the audio side of electronics. He clearly had the ear for it, being an accomplished cellist as a teen. He and his brothers performed over WOAW as the McIntosh String Trio while still in school at Omaha's Technical High.

Turning down music scholarships, McIntosh instead followed radio's calling. He taught radio and wrote columns on radio for newspapers. Before long he was back at WOAW, this time as chief engineer.

In 1929 McIntosh left for New York City where he spent eight years at Bell Labs installing and maintaining equipment for over 200 radio stations. During the war he was with the Radio and Radar Division of the War Production Board.

After the war he and partner Gordon Gow worked on improving audio, seeking an amplifier that would work the full audio range with a flat, clean delivery. In 1949 the duo designed breakthrough circuitry that enabled high-power sound amplification with low distortion. This launched the home Hi-Fi craze in the ‘50s followed by the home stereo market of the ‘60s and ‘70s.

McIntosh formed his own company manufacturing high-end stereo equipment that included preamplifiers, tuners, receivers, speakers, and other audio gear. The McIntosh name was revered by audiophiles.

Upon Frank McIntosh’s departure from the Woodmen station in 1925, William Kotera, formerly an engineer and announcer for South Omaha’s WIAK since 1922, took over even before the calls were changed to WOW. Kotera’s interest in radio began while a Tech High student operating his own amateur station in 1921. Except for a short stint as engineer at KMMJ in Clay Center, Nebraska at age 24, his career was centered on WOW.

William Kotera
(WOW Archives)

WOW’s studio and transmitter still were in its original headquarters atop the Woodmen of the World Building in downtown Omaha when Kotera arrived.

In the 1930s Kotera was responsible for the station’s move into new state-of-the-art studios in the Insurance Building at 17th and Farnam Streets. At the same time he oversaw the station’s new transmitter plant and 454-foot tower being built on an acreage at 57th and Kansas Avenue.

During Kotera’s long-time reign as WOW’s chief engineer, he constructed WOW TV Channel 6 in 1949, moved the WOW-AM studios once again in 1960 to join the television facilities at 3501 Farnam Street, and put WOW-FM on the air in 1961.

Honorable mentions go to Carl Hemple, John Yeiser, Dr. Frederick Millener, and James O. Weldon.

Hemple’s interest in radio began as an amateur radio announcer. While his friend Ronald Rockwell was broadcasting over his own station, Hemple was on the air over R. B. Howell’s WOU in 1921 reading bedtime stories each night to the kids. At 8:30 he delivered twenty minutes of news, followed by weather and market reports, capping the broadcast with a phonograph concert.

Hemple didn't start a station of his own but was called upon to launch WAAW for its inaugural broadcasts from the Omaha Grain Exchange in 1922. He constructed and installed WAAW's transmitter, a 100-watt unit he built from scratch for 100 dollars.

Hemple ran a business at 204 South 24th Street that not only marketed name-brand radios but also offered a design of his own. Hemple Electric manufactured and marketed his set as a "radio apparatus" that would "pick up Denver, Detroit, Madison (Wisconsin), Pittsburgh, and other broadcasting stations."

His radio was basically a detector and two-stage amplifier that sold for 150 dollars. The price included a highly finished walnut cabinet, polished brass handle, storage battery, headphones, and four blocks of large "B" size batteries. Calling it his special "Grainman's" receiver, a nod to the Grain Exchange where he engineered WAAW, the price was upped to 190 dollars by July.

After WAAW, Hemple was the engineer for KDEF in 1924, the US Post Office station that as part of the government's air mail service was becoming a service for aviation. The station by this time was located at Fort Crook Field south of Omaha. KDEF's airport-to-airport weather reports assisted night time airmail pilots crossing the country from New York to San Francisco. Communication with aircraft in flight was still rare as few planes were yet equipped with radio.

Hemple's interest in developing radio as an aid to aviation turned to "sidelining atmospherics." By atmospherics, he meant static, and sidelining meant reducing. He left for an engineering position at the Bureau of Standards Laboratories and later at Boeing, reducing static interference through the use of directional antennas and the design of limiter circuits that clipped the peaks of static bursts.

John Yeiser went a different direction. Somewhat rebellious, he operated his station WDV slightly off frequency to get away from the clutter on the channel and be better heard. It didn't last long as he was soon tossed off the air for creating interference to operations at Fort Omaha. He then sued the U.S. Government for monopolizing radio frequencies (his father was a lawyer).

He lost the suit but he stayed in the game. Yeiser assisted Ronald Rockwell in putting WOAW on the air in 1922.

Yeiser became a lawyer and a member of the state legislature, but his love of the wireless remained. He opened a radio sales studio at 1415 Farnam around 1927 displaying and selling high-end radios. The studio in 1928 moved to the Riviera Theater Building at 2011 Farnam and a year later was at 208 South 18th Street.

John Yeiser
(1929 photo)

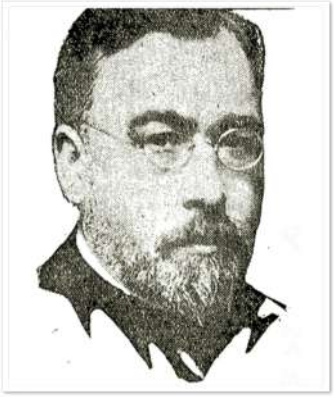
The newest sales studio was scattered with decorations of plants and palms. Among them were state of the art home radios. One special display in October 1929 featured a radio and automatic phonograph that would play records continuously for an hour.

Also deserving a mention is Yeiser's mentor, Dr. Frederick Millener. He was a friend of Yeiser's father who visited and kept the youngster enthralled with his conversations on the possibilities of the wireless.

An instructor at Fort Omaha in 1920, Millener was in charge as Chief of Radio and Electrical Experimental work at the post. But his earlier efforts are what brought him attention. Among his high-profile demonstrations was controlling 4,000 incandescent electric lamps in the 1909 Omaha Electrical Show from a wireless telegraph station at Fort Omaha, five miles from the building.

Millener's interest in electricity had overtaken his initial pursuit of medicine. The physician-turned-inventor began major experiments in 1906 when hired by Union Pacific Railroad. The railroad was interested in the new wireless technology for its possible communications with trains.

Millener had a dozen radio telephone patents by 1913, but his attempts at outfitting a U. P. rail car with radiotelephone were unsuccessful. Though he succeeded in communication with a moving train in 1914, further tests were disappointing. The railroad finally pulled the plug after spending seven-thousand dollars on the project in an era where ten dollars a week was good take-home pay.



Dr. Frederick Millener
(1929 photo)

An unusual demonstration came in April 1920 when Millener set up a transmission and listening post 25 miles south of Omaha seeking communications with Mars during its closest approach to earth. Even with press coverage reporting only silence from the Red Planet, Millener was undaunted.

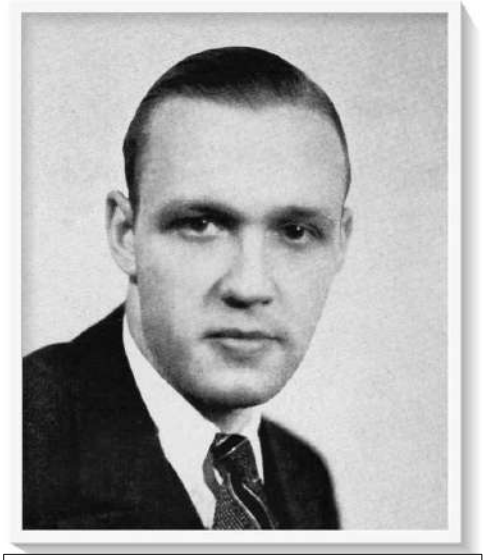
Millener was ambitious and thought big at a time when radio gear was huge, awkward and unwieldy. He would order heavy transformers and build miles of antenna in this earliest period of electrical studies. His labor-intensive efforts and experiments proved to be valuable contributions on the path to broadcasting.

Dr. Millener and assistant at his Mars transmission and listening station. (© 1920 OWH)

Another Midwesterner who went on to great engineering success was James O. Weldon, a transmitter genius who designed and built high-power transmitters beginning in 1930.

Born in Missouri, Weldon completed his studies at the University of Nebraska in 1927. He went on as a broadcast engineer at several radio stations around the Midwest that included the infamous KFKB in Milford Kansas. It's owner was John Brinkley, soon forced off the air for promoting his questionable medical practice.

Brinkley moved to the Mexican border bringing Weldon with him in 1931 to help build and oversee a high-power station in Villa Acuna, Coahuila, directly across the Rio Grande from Del Rio, Texas. In what became known as one of the "border blasters," XER on 735 kHz boasted a nighttime signal covering much of the U.S and Canada.



James O. Weldon, UNL graduate who engineered high-power transmitters in the 1930s.

XER became a pawn in US-Mexican relations. It was silenced for a period but returned to the air in 1935 with even more power, 180-thousand watts. XER's power was *further* increased to a whopping 520-thousand watts in 1938 thanks Weldon's brilliant engineering.

Weldon, by now a renowned expert on high power radio transmission, went on to form Continental Electronics in Dallas in 1946 where he built high powered shortwave transmitters for the Voice of America and powerful radar transmitters for the U.S. military. The company still builds transmitters including commercial units. KOMA 1520 Oklahoma City covered much of the West replacing its old unit with a 50-thousand watt Continental in the early 1970s.

EKKO VERIFICATION STAMPS

Before rating services, broadcasters were dependent on mail response for gauging listenership. In 1924 the EKKO stamp company of Chicago came up with an idea that would encourage letter-writing to stations.

The company printed postage-sized stamps in various colors and sold them to stations with the call letters prominently imprinted. At the same time, they marketed stamp albums that had spaces to hold a collection of stamps listeners would receive in replies from the stations. The album included information on how to write a basic reception report to a station.

Broadcast band DXing (distant listening) was a rapidly growing pastime and EKKO stamp collecting became wildly popular, not dying out until well into the 1930s.

1923 NEBRASKA STATIONS LIST- *Omaha World-Herald*

Radiophone broadcasting stations and owners in Nebraska
per the *Omaha World-Herald*, Jan 5, 1923

WNAL	Omaha	RJ Rockwell
WOAE	Fremont	Midland College
WPAA	Wahoo	Anderson & Webster Electric Co.
WRAR	David City	Jacob C Thomas
WJAB	Lincoln	American Radio Co.
WJAG	Norfolk	Norfolk Daily News
WKAC	Lincoln	The Star
WKAM	Hastings	The Tribune
WLAD	Hastings	Arvanette Radio Supply
WLAF	Lincoln	Johnson Radio Co.
WFAV	Lincoln	Univ of Nebr Dept of Engineering
WGAT	Lincoln	American Legion
WIAK	So. Omaha	Journal Stockman
WEAV	Rushville	Sheridan Electric Svc. Co.
WAAW	Omaha	Omaha Grain Exchange
WCAJ	Lincoln	Wesleyan Univ.
WOU	Omaha	Metropolitan Utilities District

1923 NEBRASKA AND IOWA STATIONS LIST- US Commerce Dept.

U.S. Department of Commerce list, later in 1923, showing
Station Frequency, City, and Owner:

NEBRASKA

WOAW	570 Omaha NE Woodmen of the World
KFCZ	833 Omaha NE Omaha Central High School
KFDR	833 York NE Bullock's Hardware & Sporting Goods
KFEQ	833 Oak NE J. L. Scroggin
WAAW	833 Omaha NE Omaha Grain Exchange
WCAJ	833 University Place NE Nebraska Wesleyan University
WFAV	833 Lincoln NE Univ of Nebraska Dept. of Electrical Engineering
WJAB	833 Lincoln NE American Electric Co.
WJAG	833 Norfolk NE Norfolk Daily News
WNAL	833 Omaha NE R. J. Rockwell
WOAE	833 Fremont NE Midland College
WQAY	833 Hastings NE Gaston Music and Furniture Co.
WTAU	833 Tecumseh NE Ruegg Battery & Electric Co.
KFFX	1080 Omaha NE McGraw Co.

WIAK	1080 Omaha NE Journal-Stockman Co
WKAC	1090 Lincoln NE Star Publishing Co.
WMAH	1180 Lincoln NE General Supply Co.
KFHP	1220 Kearney NE Radio-Bug Products Co.
KFJA	1230 Grand Island NE Central Power Co.
KFDU	1250 Lincoln NE Nebraska Radio Electric Co.
WRAR	1330 David City NE Jacob Carl Thomas
KFGV	1340 Utica NE Heidbreder Radio Supply Co.

IOWA

WOC	620 Davenport IA Palmer School of Chiropractic
KFCY	833 Le-Mars IA Western Union College
KFFV	833 Lamoni IA Graceland College
WDAX	833 Centerville IA First National Bank
WEAB	833 Fort Dodge IA Standard Radio Equipment Co.
WEAU	833 Sioux City IA Davidson Bros. Co.
WGF	833 Des Moines IA The Register & Tribune
WHAC	833 Waterloo IA Cole Brothers Electric Co.
WHAI	833 Davenport IA Radio Equipment & Manufacturing Co.
WIAH	833 Newton IA Continental Radio & Manufacturing Co.
WIAS	833 Burlington IA Home Electric Co.
WIAU	833 Le Mars IA American Trust & Savings Bank
WJAM	833 Cedar Rapids IA D. M. Perham
WKAA	833 Cedar Rapids IA H. F. Paar
WLAT	833 Burlington IA Radio and Specialty Co.
WOAD	833 Sigourney IA Friday Battery & Electric Corporation
WOI	833 Ames IA Iowa State College
WPAF	833 Council Bluffs IA Peterson Radio Co.
WQAK	833 Dubuque IA Appel-Higley Electric Co.
WHAA	1060 Iowa City IA State University of Iowa
KFDP	1080 Des Moines IA Hawkeye Radio & Supply Co.
KFJB	1210 Marshalltown IA Marshall Electric Co.
KFIK	1280 Gladbrook IA Gladbrook Electrical Co.
KFER	1300 Fort Dodge IA Auto Electric Service Co.
WRAN	1310 Waterloo IA Black Hawk Electrical Co.
KFHL	1320 Oskaloosa IA Penn College
KFGQ	1330 Boone IA Crary Hardware Co.

THE 1928 FREQUENCY ASSIGNMENTS- Federal Radio Commission

Here's the Omaha radio dial showing how Omaha's local and regional stations settled in with the FRC's final order, effective November 11, 1928. Station power in watts follow the call letters, followed by ownership:

- 590 WOW 1000 watts. Omaha Woodmen of the World Life Insurance. Ordered to share time with WCAJ Lincoln, 1000 watts, Nebraskan Wesleyan College.
- 660 WAAW 500 watts Omaha. Daylight hours only. Omaha Grain Exchange. Night time hours belong to WEAF, 50,000 watts, New York City (licensed to Bellmore, NY), Owned by AT&T.
- 770 KFAB 5000 watts Lincoln, NE. Nebraska Buick Auto. Ordered to share time with WBBM-WJBT Chicago, 25000 watts, Atlas Investment Company.
- 890 KFNF 500 watts Shenandoah, IA, Henry Field Seed Company. Ordered to share time with WNAX-KUSD Yankton, SD, owned by Gurney Seed and Radio Apparatus Company.
- 930 KMA 500 watts Shenandoah, IA. May Seed Company. Ordered to share time with KGBZ York, NE, 500 watts, Owned by George Miller.
- 1000 WHO Des Moines 5000 watts. Bankers Life. Ordered to share time with WOC 5000 watts Davenport, IA, Palmer School of Chiropractic.
- 1060 WJAG 500 watts Norfolk, NE. Limited Hours. Norfolk Daily News.
- 1210 KFOR 100 watts Lincoln, NE. Howard A Shuman.
- 1260 KOIL 1000 watts Council Bluffs, IA. Mona Motor Oil Company
- 1420 KICK 100 watts Red Oak, IA. Atlantic Automobile Assoc., Red Oak Radio Corp., lessee.

CHAPTER THREE- THE GOLDEN YEARS

"*By about 1935 rural areas were being electrified and farmers could buy AC sets with single-knob tuning and powerful dynamic speakers. This was the time of the 'golden age of radio' with the big network evening shows like Jack Benny and Amos and Andy and daytime soaps such as 'Oxydol's own Ma Perkins'.*" -- Al Smith, broadcast engineer at KMMJ Grand Island, later at KFAB Omaha.

THE GOLDEN AGE DAWNS

As the 1930s got underway, two of the four major broadcasters in the Omaha market were broadcasting directly from downtown studios and transmitters: WOW from high atop its Woodmen of the World building and WAAW from the Grain Exchange Building.

KOIL and KFAB were not yet licensed to Omaha. KOIL's signals emanated from the hills on the east edge of Council Bluffs while KFAB in Lincoln aired programs from its downtown Buick showroom studios over its relatively new transmitter near the fairgrounds. KFAB's was the market's first separation of the transmitter to a site away from the studio.

Radio entertainment and news quickly grew into a huge commodity, a cheap form of entertainment during the Depression-plagued 1930s. The new medium kept growing despite the struggling economy.

By the dawn of the 1930s volunteer talent was being replaced by paid professionals. KOIL's entertainment budget for talent by then was $60-thousand per year.

Block programming prevailed with most shows running 30 to 45 minutes, few for more than an hour. Long-form programming with listeners dropping in and out was unheard of. Variety was the rule; music repetition was taboo. The industry-wide programming belief was that balance was key. KOIL's Don Searle described it succinctly in 1930: "There must be a proper proportion of music (classical, popular, and religious) and educational, civic, and dramatic features. A place for everything and everything in its place." (*OWH* Dec 7, 1930). Broadcasters stubbornly clung to this philosophy well into the 1950s when confronted with audiences shifting their attention to television.

While musicians and vaudevillians made the transition to radio to fill the entertainment schedules, one new talent group had sprung up: The announcers. As networks developed, producers sought quality voice and distinct pronunciation from announcers, reading and not veering from a script while wearing a coat and tie. In auditions seeking the "Million Dollar Voice," announcers were instructed that even though millions may be listening, one's average audience is a family of three.

At local stations it remained quite different. Commercials were often ad-libbed, and announcers who could double as vocalists were still in demand as the 1930s got underway. KFAB's Gloomy Gus had a music background as the front man for a jazz orchestra. He was followed by announcer-vocalist Lyle DeMoss who later spent years at WOW.

KOIL signed on with Harold Hughes, who, like most in his position, read the news, introduced acts and sang. Singing announcers in Omaha reached a zenith as late as 1943 with WOW's Announcer Quartet winning first prize in a *World-Herald* talent contest.

Soon, studios reached out to where the music was playing. Theaters and hotel ballrooms were turned into music venues by stations that could afford phone lines to the venues for pickup. Stations lucky enough to reside in hotels simply ran a line down to the ballroom. KOIL setup a small studio in Omaha's Fontenelle Hotel as a convenience for talent visiting the city and also aired dinner music by Randall's Royal Fontenelle Orchestra live from the hotel's main dining room.

In the mid-1920s, Omaha's KFCZ at Central High School had lines set up to the Rialto Theater and to the Schmoller and Muller Piano Company for daily programs of music.

Phone lines for remote pickups were expensive with AT&T charging hourly by the mile. The dawn of national networks in the late 1920s into the 1930s allowed stations to supplement or replace their own remote lines with the net's national offerings from ballrooms in New York, Chicago, and other major cities. Dance bands from anywhere in the country became a late night staple.

Distant stations provided this pool of offerings each night as the skywave skipped into Omaha from all directions. In turn, Omaha offered entertainment and information of its own to wide swaths of the nation.

Engineer Al Smith who worked at Lincoln's Central States Broadcasting in 1937 recalls live remote programming: "KFOR carried an organ concert from the Lincoln theater every day at noon. KFAB aired a multi-microphone service from a local church on Sundays, and also broadcast football games. We also fed dance bands to the networks after 10:30 p.m., a common practice among network affiliates."

Some stations hired in-house orchestras, particularly after building new studios large enough to hold them. KOIL's Barnsdall Symphony Orchestra performed nationally from Omaha over CBS in 1930. WOW's twelve-piece orchestra in the station's new 1935 studios with its three new Baldwin Masterpiece grand pianos played on into the 1940s. Between broadcasts these orchestras often would have a hotel ballroom home or play road dates under their own bandleader names.

Nationally heard from Omaha was orchestra music from the Blackstone Hotel on KOIL. Fiddling contests on KFNF gained audiences. KOIL aired songs by their Mona Oil Twins, a musical duo that also traveled a circuit to perform on other stations in the region. Horticulture advice from the Shenandoah stations found a wide following.

Music programming began to share time with comedy and drama programs on the networks, most shows from Hollywood or New York, but some produced at local levels. KOIL produced the series *Parade of News* for the Mutual Broadcasting System, along with providing occasional feeds of special events plus the ballroom pickups. Oddly, there is no evidence that KOIL's successful, long-running, locally-produced drama *Krime Klan* was ever fed nationally.

Notable in the 1930s was that stations and networks began advertising in print. Until then the only radio-related advertising that existed starting in the 1920s was primarily from radio equipment manufacturers, often with splashy display ads of their radio sets sometimes taking a full page. Stations relied solely on program listings in the newspaper and word of mouth for getting programming information out. It wasn't until the mid-1930s that stations began showing up in print advertising to promote programs, although it was typically the program sponsors and not the stations themselves picking up the tab.

Omaha received special attention in 1935 when the *Major Bowes Amateur Hour* had an "Omaha Night" announced through a series of print ads in October. It aired over WOW Sunday, October 20th at 7 p.m. Most unusual was WSM Nashville taking out an ad in the Omaha paper promoting a musical tribute to Omaha on February 27th, 1935.

OMAHA'S STATIONS DURING THE GOLDEN YEARS

- 590 WOW Omaha
- 660 WAAW Omaha (became KOWH in 1939)
- 770 KFAB Lincoln.
- 1260 KOIL Council Bluffs (community of license changed to Omaha in 1936).
- 1420 KICK Carter Lake (1933-1934)

WOW 590 Omaha

As the Thirties commenced, WOW had the best signal in Omaha and the most popular network. On the downside, the station had a time-sharing restriction with Wesleyan's educational station WCAJ at University Place in Lincoln. The Omaha station had to leave the air at various times for three cumulative hours each day for the educational broadcaster.

WOW had good leadership going into the new decade. WOW's program director was Marie Kieny, appointed in 1929 (*OWH* Jan 7, 1929). Kieny was an accomplished pianist and actress. She was praised for her work in a December 1929 *Readers Digest* article.

Marie Kieny,
WOW program director
(© 1930 Readers Digest)

It' s notable that women were often hired to manage programming in radio's early years. With their musical contacts they would be responsible for booking the live entertainment that filled much of the schedule, and would even work in front of the mic introducing the talent.

Women all but vanished from the airwaves as the networks dveloped, broadcasters complaining the tone quality of early receivers made higher pitched voices shrill. The prejudice lasted for years. By 1930 women's voices were relegated to afternoon housewife programs on cooking and fashion. (*Radio World*, Aug 1, 2020).

Kieny married and resigned in 1932, replaced by John J. Gillin, Jr. who had joined WOW in 1929. He had landed his first commercial radio job in Chicago just two years before coming to Omaha. Like many entering radio in the day, Gillin was a showman, a vocalist with an acting background. He performed in dramatic roles with the Creighton University players while attending its law school.

Gillin rose up the ranks quickly. He was soon General Manager and guided the station through a major expansion in the 1930s. He would continue to oversee operations during the war years becoming WOW President in 1943.

Behind the scenes, WOW was engaged in battles on two fronts: to protect its frequency and to gain full-time operation on 590.

FRC hearings in Washington were busily dealing with challenges from new stations in the south and east wanting on 590 kHz.

As for the full-time operation battle, WOW filed an application for full-time use of the frequency in 1930 as an opening salvo against WCAJ.

The battle with WCAJ continued until 1933 when WOW finally bought out the poorly funded university station's property and license. FRC approval came setting August first as the effective date. With WCAJ silenced, WOW became full time.

WOW Studio C, the smallest of the three studios, with its own Baldwin piano. (1935).

(Educational broadcasters, many of which had pioneered the new technology from school labs, found themselves rather low on the regulatory totem pole. Federal regulators believed commercial enterprise was the best way to successfully develop broadcasting.

(Very few educational stations survived into the modern years. Notable exceptions in the Upper Midwest are WSUI 910 Iowa City, WOI 640 Ames, and WHA Madison, Wisconsin, and until more recent years, KUSD 690 Vermillion, South Dakota, and KKSU 580 Manhattan, Kansas.

(Years later when the FM Band was allocated, the government reserved the low end of the band, 88 to 92 MHz, for non-commercial licensees which included educational stations.)

As for protecting its frequency, WOW won nearly all its battles until daytimer WKZO Kalamazoo, Michigan succeeded in its quest for full-time on 590. It was a landmark case where the FCC granted nighttime broadcasts for stations with newly-developed directional antenna systems that could be designed to protect co-channel stations. For WKZO, the win came thanks to a night signal that could be beamed away from WOW permitting full time operation. This ruling allowing directional antenna systems opened the way for more stations to increase nighttime power and for new stations to squeeze in with signal patterns that could now avoid nearby stations.

.WOW management then turned its attention to upgrades. Again, station owner Woodmen of the World didn't cut corners. After its ambitious start in the early 1920s, management was ready to move on to higher power and better studios. Major expansion began in 1935.

For studios and offices, the seven-story red granite Insurance Building at 17th & Farnam was selected. The building had just added air conditioning, a luxury almost exclusive to movie theaters at the time, for a cost of $175 thousand.

The station's move from its "Crystal Studios" atop the Woodmen of the World Building to the new studios in the Insurance Building was completed in December 1935.

The new WOW Control Room with turntables for airing transcribed programs (1935).

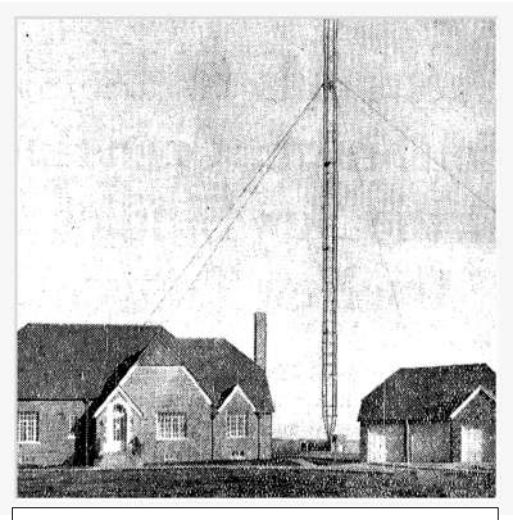
(The Insurance Building originally was the *Omaha Bee* Building, built in 1888 by the newspaper's editor Edward Rosewater on the site of what was once his family homestead. Both the *Bee*/Insurance Building and its neighboring Old City hall were torn down in 1966 to build the new Woodmen Tower. The old 1912 Woodmen of the World building was imploded in 1977.)

The new lobby and studios were luxuriously elegant. There were three air-conditioned studios. The main second floor studio was large enough to accommodate a symphony orchestra. It was was suspended by cables from the third floor to avoid vibrations. The studio was further soundproofed with insulation on all sides and three-inch-thick doors weighing nearly 400 pounds each. No fewer than three new Baldwin Masterpiece grand pianos, popular at over 200 radio stations at the time, were ordered for the studios (WOW Archives).

An audition room for clients provided home-like comfort in which to hear spots and prospective shows. An artists lounge was built for guests and live talent.

The master control room handled the switching and feeds, and also held the turntables for electrical transcription programs.

The move from atop the Woodmen Building also called for a new transmitter site, leaving behind for dismantling the old 1920s transmitter and its two rooftop towers. WOW gained a construction permit for a new site and for an increase in power from 1000 to 2500 watts. The power increase was later amended to 5000 watts in June 1934, though the authorized night power would remain at 1000 watts until 1939.



WOW transmitter building, garage, and base of its 454-foot tower (1935) (Courtesy Omaha World-Herald).

The new transmitter site had to allow for a tall tower, as horizontal aerials in broadcasting were being relegated to history. Vertical towers acting as the radiator take less space and can be heightened to a wavelength that matches the transmitting frequency. The match allows maximum efficiency of output power.

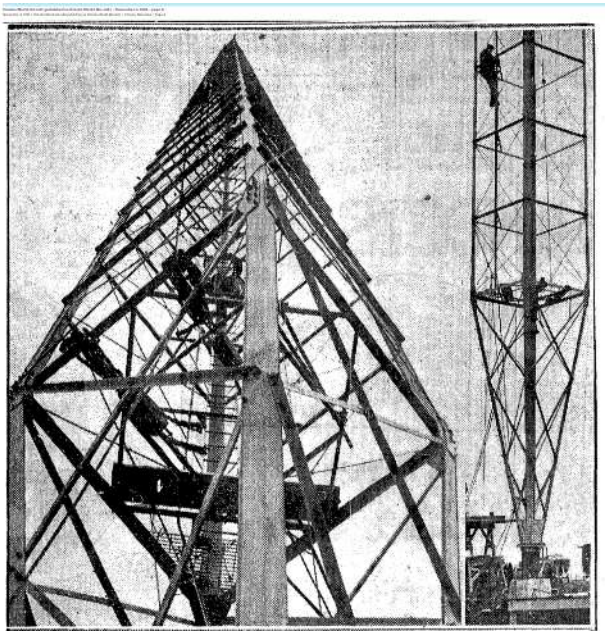
Shorter towers of one-half to one-quarter wavelength also perform at nearly peak efficiency and became economically common in AM broadcast use. Even so, at the low end of the dial the wavelength is quite long to begin with and WOW engineers calculated their tower height to be well over 400 feet.

A large tract of land was selected on what was then the western outskirts of the city some two miles outside the city limits at 56th and Kansas Streets. The 16-acre site became known as the WOW Farm. The Chief engineer overseeing construction was William Kotera.

A brick transmitter building and a three-car garage were constructed a few hundred feet from the base of the tower to serve as living and working quarters for a resident engineer. Inside, a new 5000-watt Western Electric transmitter was installed.

The $10-thousand tower was constructed by the Blaw-Knox company, the firm responsible for its distinctive diamond-shaped Blaw-Knox tower design used at a number of stations such as WSM Nashville and WLW Cincinnati, several now on the US National Register of Historic Places.

The WOW tower was topped off in early November 1935. Sitting on a one-foot conical porcelain base, the structure was eight-feet square all the way to the top. Four guy wires secured the tower at the 240-foot point. The top was designed to sway as much as six inches. (This original WOW tower was toppled by a May 12, 1956 tornado.)



1935, Two views of the new WOW 454-foot tower.

The first resident engineer at the "Farm" was Edward R. Anderson, the former instructor at the High School of Commerce station in the early 1920s. According to Anderson, the new transmitter operated with about two-thousand dollars worth of vacuum tubes, the priciest tube being about 300 dollars. The tubes were guaranteed by the manufacturer for 1000 hours, but most would last about 5000 hours. All tubes were stocked in duplicate to keep off-air downtime at a minimum. Most tubes that go out during a broadcast could be replaced in two to three minutes.

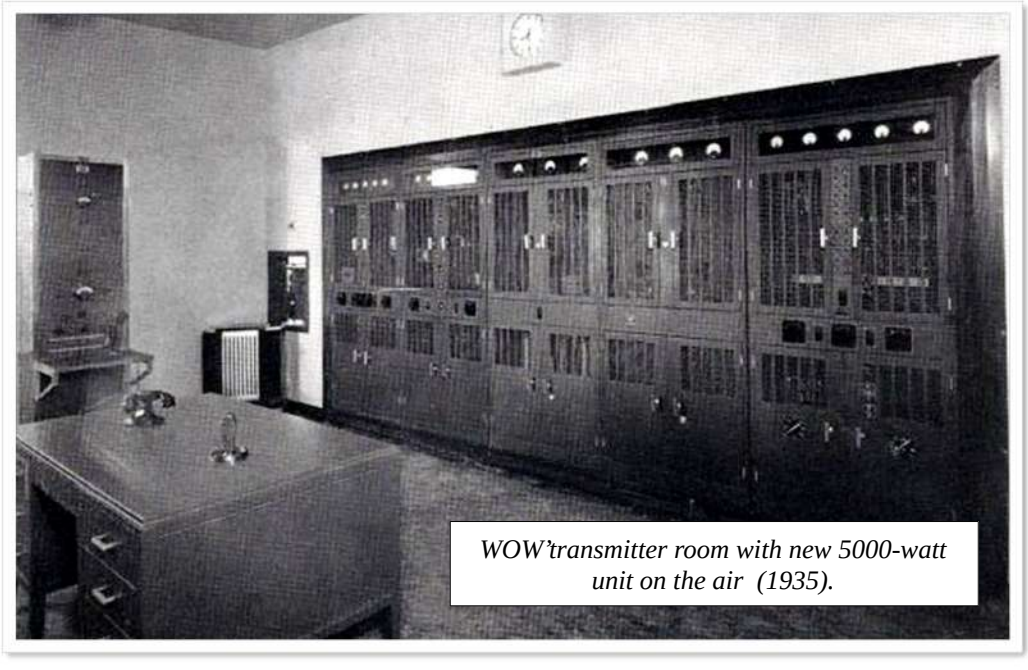
WOW Engineer Edward R. Anderson. (WOW Archives)

The new transmitter lit up on December 4, 1935. WOW's 590 kHz signal immediately rivaled that of KFAB 770 kHz in Lincoln which had just increased power to 10-thousand watts in June.

Though KFAB had twice the power, WOW's lower dial position had the advantage: the lower a station's operating frequency, the greater the ground wave reach. WOW's radius coverage area on 590 was a solid 200 miles, plus another 100 miles of fringe listening area.

The new WOW 590 facilities were a boon not only to local sponsors but to NBC Red, now with better coverage than ever over Omaha and the region. It was during this time that NBC Red programming had matured into a mix of music, personality entertainment, and news.

WOW carried NBC's most popular entertainment shows that had developed on the Blue Network but had by this time transitioned to Red in the '30s. Those included *Bob Hope, Jack Benny, Fibber McGee and Molly,* and *Information, Please*.



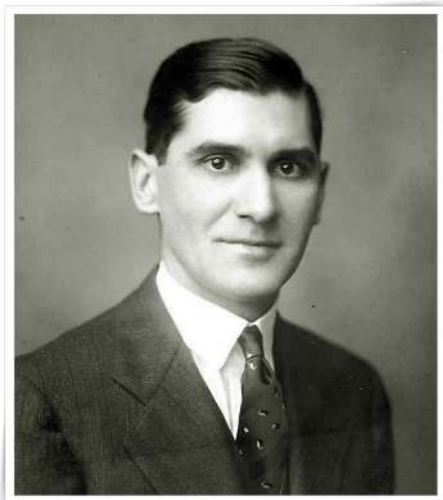
WOW'transmitter room with new 5000-watt unit on the air (1935).

As the 1930s progressed, NBC offered a variety of classical concert broadcasts including *The Voice of Firestone, The Atwater Kent Hour,* and *the Cities Service Concerts*. Also popular were performances by the NBC Symphony Orchestra conducted by Arturo Toscanini that first premiered on the Blue network in 1937.

Notable is that in 1931 NBC's Merchandise Mart studios (19th floor) in Chicago became a major network production center only a few weeks after its opening. In particular, the programming---mostly music and variety, and initially unsponsored--- developed by NBC-Chicago helped build an audience for coast-to-coast daytime network broadcasting.

In 1935 NBC aired numerous live remote broadcasts of popular music from ballrooms, hotels, supper clubs, and Army camps. Among the band leaders with regular time slots on NBC were Carmen Cavallaro, Nat King Cole, Xavier Cugat, Tommy Dorsey, Eddy Duchin, Benny Goodman, Stan Kenton, Guy Lombardo, and Glenn Miller. Locally, programming included WOW's own 12-piece studio orchestra directed by Freddie Ebener.

(Side note on radio's strong influence: when Benny Goodman's band unexpectedly began popularizing swing music on the West Coast in 1935, it was found that the difference in time zones was responsible. Goodman played swing in the late night hours in New York thinking it was a good low-listening time in which to experiment. But with the time difference it was airing to a huge, receptive audience during prime evening hours in the Pacific Zone. It was just the beginning of radio influencing record sales. The swing era was hot for the next ten years.)



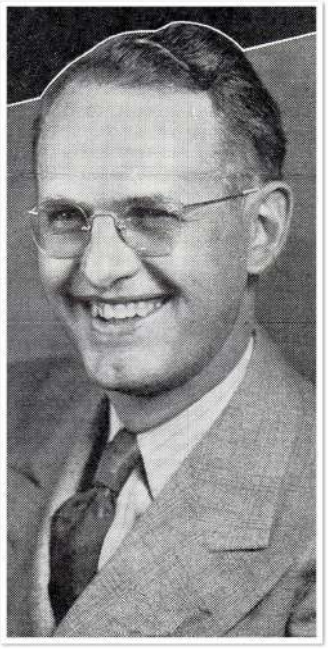
Tom Chase, whose career later extended to WOW TV as host of "Trail Time," an after-school Western serial. (WOW Archives)

NBC's news department developed along with that at CBS during the latter part of the decade. Journalists heard included Morgan Beatty, Alex Dreier, Pauline Frederick, Floyd Gibbons, John Gunther, and Richard Harkness.

President Roosevelt's *Fireside Chat* broadcasts began in 1936, carried on all networks, generally around 9 p.m. Omaha time.

WOW's staff of announcers who provided news and entertainment included Lester Palmer (the station's first program director in 1923), John K. Chapel, F. Russell Baker, and Tom Chase whose focus was kid's' programs. The newsman was the highly-popular Foster May.

May came to WOW in 1935 from Central States Broadcasting System's KFOR and KFAB bringing his Man On The Street show with him. He was recognized as one of the first to broadcast Man on the Street interviews making that program genre a popular radio landmark.



Newsman Foster May

May, clearly a workaholic, set the pattern for local radio news coverage during this, its formative period. At one time he handled all newscasts from 6 a.m. to midnight before the days of leased press wires. He was known as the sort of fellow who "just happens to be there when news breaks."

Foster May worked as a traveling salesman and was with several newspapers including the *Omaha Bee-News* in the early 1930s. He got into radio by walking into the offices of KFOR Lincoln with a brash attitude and a well-worn suit, grabbing a microphone, and letting studio executives watch him interview studio employees in the style he wanted to use in Man on the Street programs (*OWH* April 1, 1952). He became a one-man news staff for KFOR and KFAB in Lincoln.

In March 1935 while at KFOR, May was forcibly ejected from the press box at the state legislature for implying that radio equipment was being barred from the house floor because members were saying things they didn't want the home folks to hear. Representative M. E. Rasdal of Ogallala, author of the motion to bar radio equipment, learned of the implication and hauled May out by the collar.

After his move to WOW, Foster's noontime Man on the Street radio program was broadcast from downtown Omaha at the busy corner of 16th and Farnam. May asked opinions on news topics of the day from passersby. The traditional introduction for his program was "Take it away, Foster May."

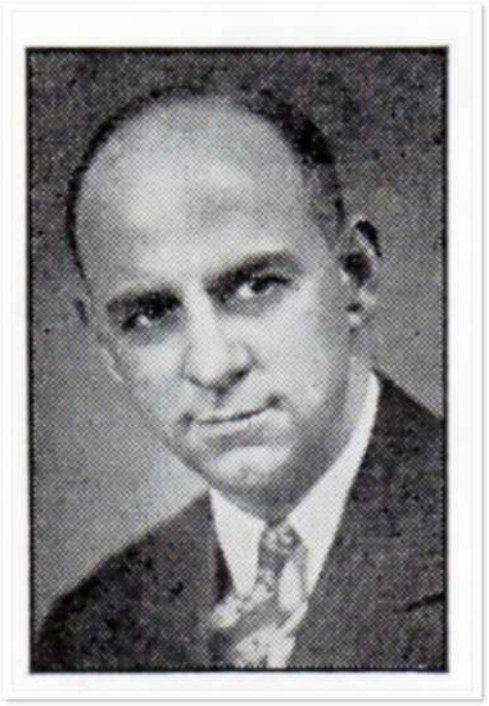
Indeed May was great for WOW's public relations. He and his mic went everywhere. Even on his vacation travels, his house trailer was equipped with transcription equipment so that he could interview the locals and send recordings back to the station. He went to South Dakota for his Man On The Street program twice monthly.

With Union Pacific headquarters in Omaha, a momentous event was covered by all three Omaha stations, WOW, WAAW, and KOIL. It was the grand entry of Union Pacific's new Streamliner *The City of Los Angeles* arriving on its maiden voyage en route to Sun Valley, Idaho in February 1937. Foster May outdid his rivals with a detailed description of the inside and outside of the train.

WOW boasted a nine-man news department during the late 1930s and by 1940 had a mobile unit for events and news. It was a Chevrolet truck outfitted with a shortwave transmitter, KAID, that would link to the WOW transmitter site. There, it would be directly patched into the air signal delivering reports from nearly anywhere in a 150-mile radius. In addition, three "pack" transmitters with a range of about a mile could be worn by reporters on foot, giving live reports back to the mobile unit which in turn would be flashed to WOW.

Foster May was joined by journalist William O. Wiseman in 1938. Wiseman came from KOIL where he was known as "The Globe Trotter." Before that, he worked at the *Omaha Daily News* where he was one of radio's earliest editors of a weekly radio column in the 1920s. He gained his radio experience as a newsreader on WOAW in 1924 for two years before joining KOIL.

Wiseman's overall career was highly impressive. While at WOW he handled promotion and was a member of the WOW Announcers Quartet. Then he was promoted to manager leading WOW into the 1960s including managing WOW TV.



WOW's William O. Wiseman, whose initials matched his station's call letters.

Foster May at the height of his popularity made a bid for a US Senate seat in 1942. He ran an energetic campaign but lost the race. The buzz afterward said that he would have won but for the fact that he ran on the wrong ticket.

Afterward in 1944, May free-lanced in radio news, went to Europe as a radio war correspondent for NBC, then to Los Angeles as a news supervisor for the American Broadcasting Company. But the pace of news coverage is brutal. May died in 1952 at a relatively young 47.

In 1936 a young Lyle DeMoss joined the already-impressive WOW staff by which time also included Gaylord Avery and Ray Olsen and was led by program director Harry Burke. DeMoss was already well-known to Omahans as a personality and vocalist on KFAB Lincoln, that station's signal serving both cities.

Lyle's voice was a natural baritone for radio. Besides singing, he excelled at commercial ad-libbing. He soon became one of the WOW quartet members, later taking over promotions and programming at WOW and becoming general manager by 1950.

Lyle's culinary interests later emerged with a TV cooking show in 1960, *Lyle's Patio*, on WOW TV and a dozen more stations. He and his son opened a restaurant in Rockbrook Village shopping mall called Lyle's Patio.

WOW's Ray Olson (1941 photo)

Ray Olson joined the WOW announcing staff in 1937 and became production manager in 1941. He was part of the WOW Announcers Quartet in 1943 and later became WOW's Program Manager.

For the midday housewife audience, Martha Bohlsen's *Martha's Homemakers Club of the Air,* later renamed *Martha's Cupboard*, ran twice weekly starting in 1938.

Bohlsen was a home economist for the Nebraska Power Company which sponsored her air time until 1949 when she went out on her own adding television to her resume. She was also appearing on KOIL 1290 at this time and later on KOWH 660 as well.

During the 1950s Bohlsen appeared on KMTV and WOW TV with regular kitchen and garden shows that was syndicated on 80 stations, all the while doing shows on radio.

Along with baseball and boxing as the mainstream sports of the time, horse racing was big, and Omaha had the tenth most popular race track in the country. WOW aired the feature races from AkSarBen, May 1937 to June 1938, sponsored by Falstaff Beer. Falstaff was a major brand at the time with a huge local brewery in South Omaha near 24th and Deer Park Blvd.

WOW, when needed, assisted NBC with program feeds and productions. Phil Spitalny and his famous All-Girl Orchestra on *GE's Hour of Charm*, a Sunday night NBC coast to coast program, was presented from Omaha November 26, 1939. The band was in town for a week's performance at the Paramount Theater. WOW assisted in the pickup and feed to 57 affiliates.

The Boys Town a capella choir was heard coast to coast over NBC from the WOW studios on Easter Sunday, 1940.

Almost immediately afterward, the *Woodmen of the World Golden Anniversary* celebration was broadcast nationwide from the Omaha Civic Auditorium on June 6th, 1940. The 7 p.m. program aired on both WOW and KOWH and was carried on 88 NBC Blue stations including network flagship WJZ in New York City.

The musical tribute was produced by WOW's Lyle DeMoss who doubled as emcee and soloist. The announcer was Harry Burke and music was provided by the WOW augmented orchestra.

WOW was riding high and would continue to do so in the war years that followed.

WAAW 660 Omaha

Of the four stations serving the Omaha market, WAAW 660 trailed in popularity. Being a 500-watt daytime-only station and lacking a network affiliation, the programming was mostly leftovers of talk and music blocks, some by electrical transcriptions, others locally produced, sponsored when possible, all scheduled around market reports. Despite this, the station embarked on an expansion in 1931.

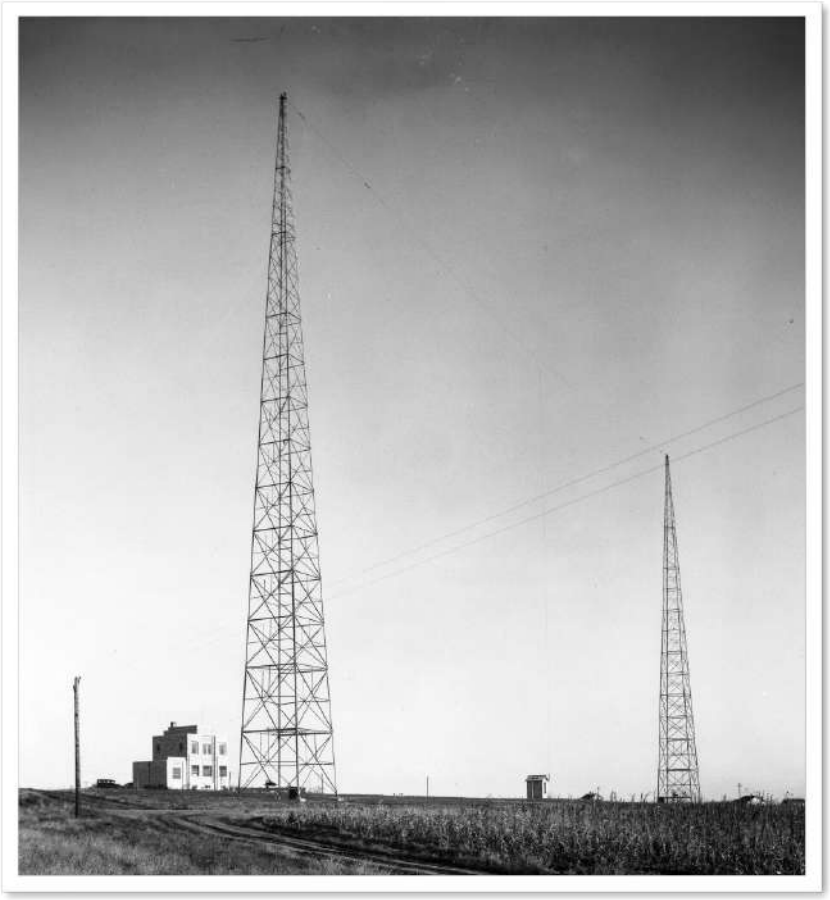
WAAW was authorized in 1931 to move its transmitter out of the Grain Exchange Building to a site north of Benson at 60th and Girard Streets. A new transmitter was installed and on the air by that spring. The studios remained in the Grain Exchange Building.

The new WAAW Transmitter, 1931
(© Durham Museum,)

The new transmitter site had two towers with the horizontal antenna suspended between them. The antenna was fed at its center, the transmission line running straight up from a small building between the towers that in turn was fed from a two-story transmitter building nearby. It was likely the last such flat top antenna to be constructed for broadcasting in this region as vertical towers soon began replacing horizontal antennas.

WAAW aired its “Exclusive grain market broadcasts direct from the trading floor of the Omaha Grain Exchange” through the decade.

But the station’s market reports were beginning to encounter strong competition in this agriculture-driven market. WOW 590 was carrying daily market reports, and KFAB heavily promoted its livestock, grains, produce, and securities market reports running three times daily, at 9:15 a.m., and 11:15 a.m., and 1:15 p.m.



1931, WAAW Towers at 60th and Girard Streets. Nearly invisible is the antenna strung between the top of the two towers, it’s feed line dropping straight down from the center point to the small building below. The transmitter building still exists as apartments, now surrounded by residences. (© Durham Museum)

News became a factor as the decade progressed. By 1936 WAAW was airing hourly news bulletins and six daily newscasts, seven during the longer summertime daylight hours, using the services of United Press. The newsman was Ken Stuart, described by the station as, “News commentator and director of special events… a distinct, colorful radio and newspaper personality.” Stuart later moved to KOIL, then to KFOR Lincoln in 1944.

Other local programming included *Police Court* at 9:35 a.m., a Man on the Street show at 12:30 p.m., and the “correct time and temperature every 15 minutes.”

In July 1938 WOW newsman Foster May began his “Front Porch” campaign for Congress on WAAW from his home at 5006 Davenport Street, broadcast nightly except Sundays at 7:30.

The *Omaha World Herald*'s Henry Doorly was interested in buying into radio and in 1935 acquired a purchase option of $150 thousand for a group of four stations that included WAAW. The other three stations in the option were KMMJ Grand Island, WJAG Norfolk, and KGBZ York. Though the FCC approved the application the following year, the sale failed to close.

(The *World-Herald*'s interest in the new medium had been demonstrated some years earlier. In 1927 the newspaper produced the *World-Herald Newspaper of the Air* on WOW 590. The program offered brief news reports from the newsroom in order to promote the greater detail to be found in the *World-Herald*. The newspaper's Sunday funnies for kids were featured at 8 a.m. starting in 1930.)

Two years after the failed sale to the *Omaha World-Herald*, the Grain Exchange attempted to sell WAAW 660 kHz to Central States Broadcasting for $55 thousand. Central States was a duopoly that owned KFAB and KFOR in Lincoln and KOIL in Omaha (KOIL by this time had just changed its community of license from Council Bluffs).

The sale was pending as late as April 1938. However, when the FCC announced it would no longer grant licenses to companies that already owned a station in a given market, that sale too, failed to close.

The *Omaha World-Herald* returned to the table and the Grain Exchange accepted $60 thousand for WAAW. This sale closed April 1, 1939.

KOWH 660 Omaha (1939-)

To distance the station from its old image, the WAAW call letters were immediately discarded in favor of KOWH, the initials for *Omaha World-Herald*.

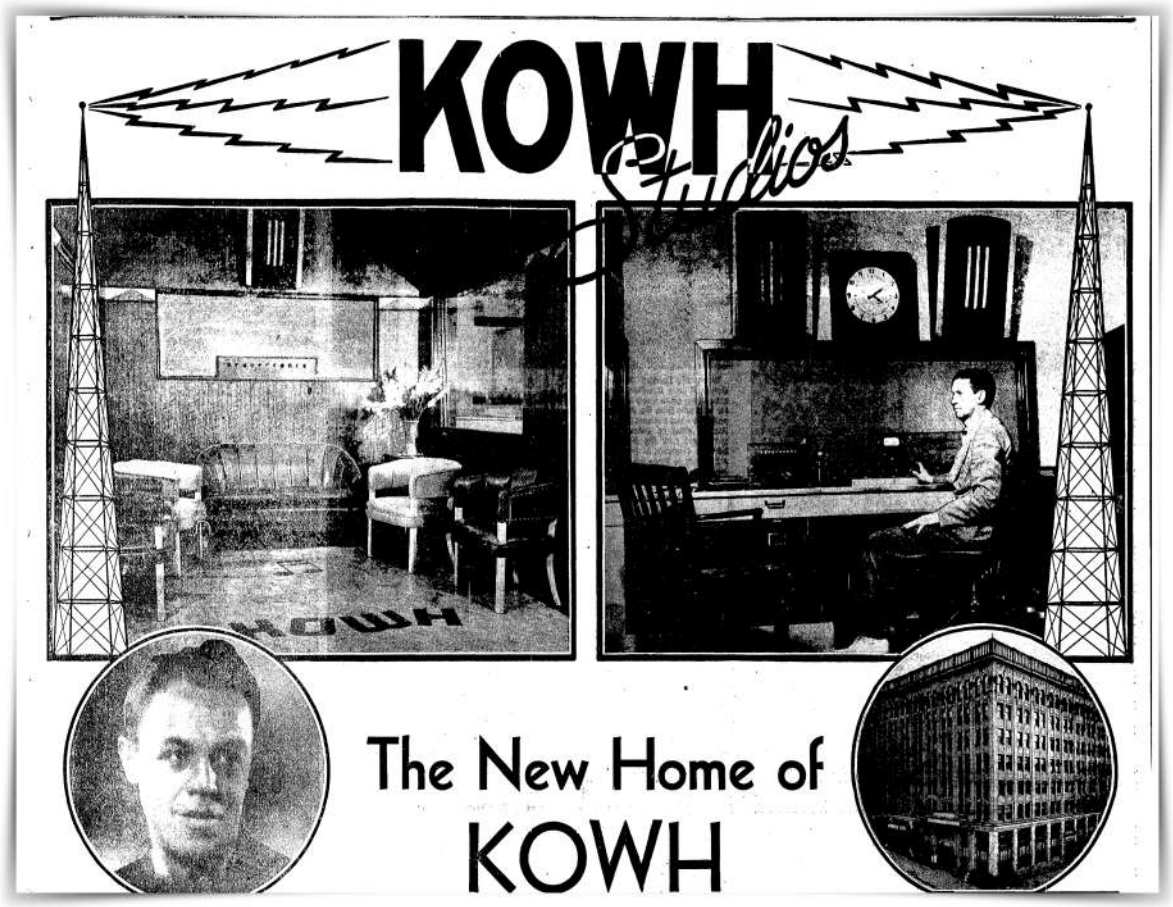
The station then joined the NBC Blue network that had been jettisoned by KOIL several months earlier, even though KOWH as a daytime-only station would be unable to carry the night time line up.

(One notable daytime program on NBC Blue at the time was the *Don McNeil Breakfast Club*, a six-year-old program that would run for a total of 35 years.)

Upon the sale's closing, the *Omaha World-Herald* ran ads stating that things would change. The new owners promised to de-sensationalize the news. All news broadcasts were to be conservative, with no "stressing, or over-playing of the news," along with efforts "to improve the quality of programs."

KOWH commenced broadcasting with its fresh call letters on Saturday, April 1, 1939, still originating from the Grain Exchange Building.

That same evening, WOW aired a half-hour welcome to KOWH as a "token of friendship." William Ruess, personnel director of WOW and chairman of auditors at the Woodmen of the World Life Insurance Society said, "As a good neighbor for nearly 50 years, I offer congratulations to the *World-Herald* on its advent into the radio field." He was joined by the WOW studio orchestra, announcer Gaylord Avery, and WOW Production Manager Lyle DeMoss (*OWH* April 2, 1939).



KOWH moves to new studios in the World-Herald Building.
General Manager Vernon Smith is pictured lower left. (July, 1939) (courtesy Omaha World-Herald)

The KOWH studios were soon moved from the seventh floor of the Grain Exchange Building to the eighth floor of the *World-Herald* Building at 15th and Farnam Streets, the newspaper quarters since 1925. Vernon "Bing" Smith was brought in from WREN in Lawrence, Kansas as General Manager.

KOWH's most notable programming improvement was in news, the station having access to all of the newspaper's resources. The station heavily promoted its news gathering facilities: news agencies, reps at the Union Stockyards and grain markets, and a staff of 87 correspondents in Nebraska and Iowa.

Other programs on KOWH included local music presentations and network shows from NBC Blue, but only those during the daytime hours to which station's operation was restricted.

KOWH carried the Rose Bowl game of 1941 in which Nebraska's Huskers led by coach Biff Jones played Stanford. (The #7 Huskers lost to #2 Stanford by one touchdown.)

One of the station's first announcers was Orville Weimer who did seven newscasts a day plus an AkSarBen racing program. Weimer had rejoined KOWH while it was still WAAW in 1936, a year after setting up the racing broadcasts at the newly-opened AkSarBen track for KOIL

Weimer was a radio engineer more than an announcer. He graduated from Technical High School in 1929, gaining broadcast experience at the school station, KFOX. He then repaired radios for a Crosley distributor before joining KOIL and KFAB as an engineer, and in 1935 even took extra work as a night engineer at WOW. He was an active ham radio operator and built all his own equipment.

Weimer stayed at KOWH until the Todd Storz takeover in 1949, then returned to engineering at WOW until retirement in 1976. (*OWH* May 27, 1984)

The *World-Herald* made an attempt to take KOWH full time with the planned purchase of KFNF 890 kHz in Shenandoah, proposing a move and a power increase to 5000 watts for the Iowa station.

KFNF was sharing time on 890 for three hours a day with KUSD in Vermillion, an educational station owned by the University of South Dakota. If full timer KFNF could be moved to Omaha, KOWH would take over its 890 dial position discarding the KFNF call letters in favor of its own and give KUSD 660 kHz all to itself.

KOWH's proposal was filed with the FCC on February 6, 1940. It was a clever plan but went no further. Most likely FCC denial came noting that Shenandoah would lose what has proven to be a viable station serving the community. There would be more attempts to move KFNF in later years, but each would denied and Shenandoah's pioneer station would stay put.

The *World-Herald* held on to KOWH 660 for ten years before selling to Todd Storz, who turned the 500-watt daytimer into Omaha's Number One station in the 1950s.

KFAB Lincoln 770

KFAB in Lincoln went through an ownership restructuring as the decade began. In June 1930 Harry E. Sidle made KFAB Broadcasting the station's licensee, moving it from under his Nebraska Buick Automobile Company. Sidles then formed the Union Holding Company, which took control of KFAB Broadcasting. Union Holding will soon add more stations to build the region's first duopoly where two or more stations in the same community share common ownership

The following year KFAB moved its studios out of the Buick Building at 13th and Q Streets into the new five-year-old Cornhusker Hotel just blocks down the street at 13th and M Streets. (The Cornhusker Hotel was demolished in 1982. It was rebuilt as the Cornhusker Square Hotel & Convention Center.)

KFAB settled in on 770 kHz following the FRC restructuring of the band in 1928. Power was a respectable 5000 watts, the most powerful in the state, but the downside was the requirement to share time with Chicago's WBBM forcing KFAB to remain silent during the prime time evening hours, specifically 7:30 to 10 p.m.

KFAB had picked up NBC Blue in 1929. But because of its forced silent period, it could not air the network's 7:30 to 10:00 evening shows. Lincoln and Omaha listeners had to tune in KWK St. Louis, WCKY Cincinnati, or WREN Topeka during those hours to hear NBC Blue programming.

(Of note, the historically popular *Amos 'n Andy* show aired at 10:30 p.m outside of the restricted hours for KFAB. The 15-minute show, titled *Fresh Air Taxicab*, began on KFAB on April 28, 1930. NBC Blue normally moved its more popular shows over to the NBC Red network, but *Amos 'n Andy* stayed on Blue until 1935.)

Having to leave the air during prime network programming in the evening hours was a problem that required ingenuity to solve. A break came at the end of 1931 when KOIL 1260 dropped CBS and snatched the more popular NBC Blue from KFAB. At the time CBS was a fledgling network still struggling to become viable. It turned out to be a fortuitous event for KFAB.

KFAB engineers and management quickly realized that with CBS, night time programming during the restricted 7:30 to 10 p.m. hours would match that of WBBM Chicago. KFAB conceivably could remain on the air during the evening hours, but only if the audio and the radio frequencies of the two stations could be perfectly matched. Unless matched, listeners in the overlap area receiving both signals at once would hear an echo created by the difference in the audio's travel time from each station.

Of equal importance, any slight deviation from the dial position by either station would create an annoying tone that could range from a low growl to a steady musical note, the tone depending upon the frequency difference.

WBBM and CBS were on board with the idea. KFAB took over the less popular CBS network on January 8, 1932, and CBS engineers went to work to find a way to get the night time signals and audio of the two stations synchronized.

CBS was just four years old and struggling when KFAB joined, but under William Paley's leadership CBS was on track to take over NBC by decade's end. Notable was that Paley signed a young star-to-be just months earlier, in September 1931. It was Bing Crosby. The crooner was introduced to the nation over CBS, airing opposite of NBC's powerful *Amos N Andy* program.

Also in 1931, KFAB launched an Omaha presence. Union Holding Company opened Omaha studios and offices for KFAB on the 11th floor of the Omaha National Bank building, downtown at 17th and Farnam Streets.

1932, KFAB's Omaha studio control room, 11th-floor of the Omaha National Bank Building at 1650 Farnam Street.

The new studios received nationwide recognition getting congratulatory mentions on the CBS network during its opening dedication on September 19. A local ceremonial broadcast featured speakers that included Nebraska Governor Charles Bryan, Omaha Mayor Metcalfe and W. Dale Clark, president of Omaha National Bank. The Omaha and Lincoln studios split airtime.

The same year, Nebraska's first duopoly was born. Union Holding bought a second Lincoln station to join KFAB. It was KFOR, licensed to Cornbelt Broadcasting. KFOR was operating from the Lincoln Hotel at 9th and P Streets.

Union Holding went after a third station in 1933 negotiating for the purchase of KICK 1420 Carter Lake, Iowa in the Omaha market. That deal failed to close, but Union Holding still got its third station just weeks later, leasing KOIL Council Bluffs, Iowa.

Meanwhile, efforts to synchronize KFAB's signal with that of WBBM Chicago at night continued. To summarize, KFAB since 1928 had been assigned 770 but was to leave the air during the prime listening hours of 7:30 to 10 p.m. in order to allow WBBM-WJBT 770 Chicago wide coverage on the channel.

(The WJBT part of the story is short. WJBT was a religious broadcaster dividing airtime on 770 with WBBM. It consolidated with WBBM in 1930 forming one full-time station using the hyphenated call letters of WBBM-WJBT.

1932 KFAB studio at new Omaha Bank Building quarters. (© Durham Museum)

(WJBT was on the air only a few hours each week using WBBM's facilities but retaining a separate license. The WJBT calls were dropped in 1931.)

At first, KFAB applied for 25-thousand watts seeking to oust WBBM from the channel in April 1930. WBBM, already at 25-thousand watts since Dec 1, 1929, had applied for the channel a month earlier.

The FRC chief examiner recommended the power increase for KFAB but denied full-time operation. Manager Dietrich Dirks found this option unacceptable. The power increase was declined and efforts to gain nighttime operation continued.

In December 1931 when KFAB lost NBC Blue to KOIL, the now-independent KFAB revealed it would take the newly abandoned and still struggling CBS if negotiations for synchronization with CBS affiliated WBBM were successful (*OWH* Dec 1, 1931).

Synchronization of signals from two overlapping AM stations had been tried in recent years but with very limited success. The best result belonged to WBZ Boston and nearby WBZA Springfield, its co-channel synchronization lasting into the 1950s.

KFAB Engineer Al Smith explains, “In order to prevent interference during evening hours, both stations had to broadcast the same program and the two carrier frequencies had to be maintained within a fraction of a cycle of each other. The frequencies of the two stations were locked together via an audio tone transmitted from the WBBM transmitter to the KFAB transmitter via a telephone line.” (Antique Wireless Assoc).

Another source indicates the audio tone was transmitted from an external source. It was a highly-accurate 4 kHz signal delivered to both stations by phone line, multiplied up to the carrier frequency, and compared with each transmitter where motor-driven variable capacitors adjusted the trimming for its crystal oscillator. (John Schneider, *Radio World*, January 2020)

Also to be synchronized was the program feed. It takes 26 milliseconds for the network audio to travel from Chicago over phone lines to Lincoln. This difference would be heard in the overlap area as an annoying echo.

Solving the audio delay issue would take more ingenuity. With CBS and WBBM footing the bill, engineers worked on a way to create a 26-millisecond delay at the Chicago transmitter in order to match the audio arriving 26 milliseconds later at the Lincoln transmitter.

The two stations applied for permission to synchronize in March 1932. The synchronization plan was watched closely by the FRC and approved a year later on March 24, 1933. It was yet another year before the synchronization became a reality.

With the synchronization system in place, the two stations got the go-ahead in spring, 1934. On May 1, KFAB went on a full-time schedule synchronized at night with WBBM. There initially was still a 30-minute silent period for KFAB from 8:30 to 9:00 p.m. for a brief while as programming details were being worked out.

(It’s interesting to note that competition from WLW also occurred this May Day night when the Cincinnati station lit up its new, heavily-promoted 500-thousand watt transmitter for the first time. WLW’s special programming included President Roosevelt who flipped the transmitter to high power by pressing a button at the White House.)

For the first several months while the electronic delay system was being constructed and perfected, a relatively primitive non-electrical delay was developed and put into use. It involved a 23-foot pipe with a speaker at one end and a microphone at the other. The distance the sound traveled through the pipe created the delay.

The audio output of this acoustical delay was a bit narrow but acceptable for the time being and was used successfully for about nine months. The electronic audio delay when completed consisted of a lengthy series of filter circuits, equalizers, and fourteen amplifiers.

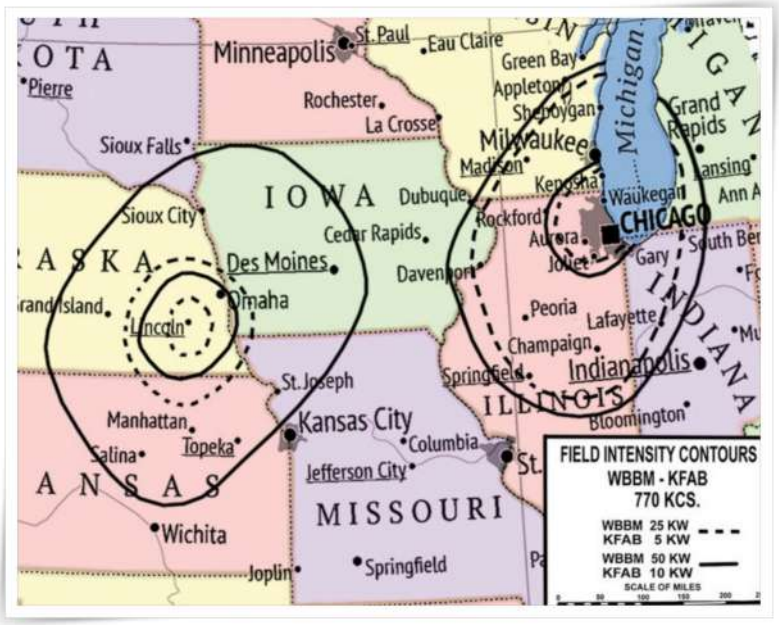
Other lesser problems were more readily solved. The two stations coordinated local station identifications during CBS evening programming. KFAB used the first half of the 30-second CBS station break, then remained silent for the second half while WBBM identified. Al Smith continues, "Each station was given fourteen seconds out of the 30-second station breaks. If WBBM had a local program at night, it paid KFAB to remain silent during that period."

There was a period of time when WBBM paid KFAB to remain off after network programming ended at 10:00 p.m. to allow the Chicago station to freely air the Big Bands that still made up much of its late-night programming.

Just a year after synchronization began, KFAB on June 26, 1935 was authorized to increase power from 5 thousand to 10 thousand watts. This called for a new transmitter. It was a state of the art transmitter using mercury vapor rectifiers and high-power water-cooled tubes.

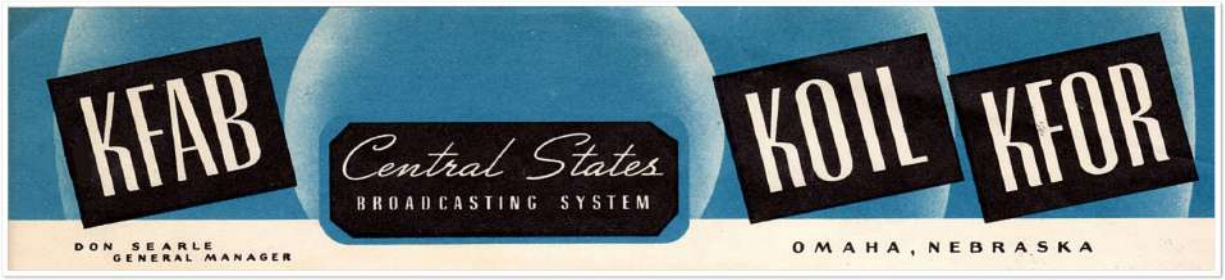
KFAB began using the slogan, *Nebraska's Most Powerful Station*. It was indeed the most powerful station between Chicago and Denver and between Minneapolis and Tulsa

KFAB and WBBM continued synchronization until 1944, even after the 1941 band restructuring moved them both to 780 kHz.



Signal coverage contours for KFAB and WBBM shown at power levels before and after the higher power authorizations. These are just the groundwave contours, the night time skywave signals going well beyond and overlapping in all directions.

In August 1935 Union Holding formed a subsidiary to operate its stations, Central States Broadcasting System. Central States oversaw KFAB, KFOR, and was the lessee of KOIL. KFAB Manager Dietrich Dirks was selected to head up the newly-named duopoly. Dirks had begun at KFAB around 1928 as Program and Sports Director calling Husker football games. He became KFAB station manager after his first year.



Central States Broadcasting System letterhead, 1939.

Almost immediately the KFAB studios were moved from the Cornhusker Hotel into KFOR's home in the Lincoln Hotel on the southwest corner of 9th and P Streets.

Just two months later, on November 14, 1935, Central States bought KOIL 1260 outright after having leased it for the previous two years. KOIL operations remained in the Council Bluffs Hilltop Studios with station manager John Henry remaining in place reporting to Dietrich Dirks. The KFAB-KFOR-KOIL duopoly then marketed itself from the Lincoln Hotel as a small, regional combo buy for sponsors.

Lincoln's two newspapers gained nearly half interest in the three stations in December 1935. The *Lincoln Journal Star* and the *Lincoln Journal* each received 25 percent ownership from Charles Stuart, now president of the Sidles Company. The deal technically was for 49 percent to the papers, but an additional percent was added in 1940 for a full half-interest.

Central States claimed a number of "firsts" in the mid-1930s. Among the claims was being the first in the Midwest to install an organized newsroom with "a battery of teletype machines." The daily newscasts in 1935 were promoted as "News when it's news," scorning stations that were observing the Press-Radio pact, a short-lived agreement to protect newspapers by delaying radio coverage.

CBS was already moving forward in news having launched an independent news division in 1933. The network's Edward R. Murrow, William L. Shirer, Eric Sevareid, Robert Trout and H.V. Kaltenborn became well-known voices over KFAB, particularly in later years as war approached in Europe.

Central States Broadcasting launched a local and regional news service in 1936 over KFAB and sister station KOIL calling it the most complete in Nebraska. Reporters Bob Cunningham and Emerson Smith aired six daily newscasts on KFAB and ten daily on KOIL, all between 6 a.m. and 10:30 p.m.

Perhaps the biggest Central States "first" was its mobile news unit. It was a panel truck equipped with a shortwave transmitter link (*OWH* June 3, 1936). The vehicle was labeled with all three station's call letters, KFAB, KOIL, and KFOR. The unit was used for spot news and at special events. The cutaway top above the passenger and driver seats allowed the newsman to stand up and describe events without leaving the vehicle, from perhaps the first-ever "sunroof."

Showcasing the station's mobility, KFAB put together an ambitious version of the popular Man On The Street interview programs in 1936. It was a four-point remote broadcast interviewing travelers as they made their way through the Municipal Airport, Union Station, the bus depot and across the Missouri River Bridge. Ten announcers and engineers took part in the daily broadcast (*Broadcasting* May 15, 1936).

By this time KOIL's John Henry had taken over Central States Broadcasting. Dietrich Dirks was moved to radio research for Central States in 1936 but soon left for Sioux City where he started KTRI radio and later KTIV, that city's first television station.

Central States Broadcasting made more moves to expand but without further success. In June 1936 Central States applied for 1500 kHz in Council Bluffs seeking to put a station on the top end of the band with 100 watts. The application was denied in June 1937. The 1500 kHz availability eventually became Omaha's KBON 1490 about five years later.

Central States again sought a second Omaha-Council Bluffs signal in December 18, 1937 when it was announced an agreement was reached to purchase WAAW pending government approval. That deal was squelched when the FCC indicated it would no longer approve of two stations in the same market to be owned by one company. The Central States Broadcasting duopoly remained at three until duopolies were finally outlawed in the early 1940s.

Don Searle took over Central States replacing John Henry at the start of 1938. It was a return for Searle who had left KOIL for WIBW Topeka just six years earlier. Searle and his family once owned KOIL, putting it on the air in 1925. Now he heads a three-station duopoly while owning interests in other stations in the region.

Searle's first challenge was dealing with a technicians strike. It was averted within weeks with a wage offer of 130 to 170 dollars a month for technicians and 150 to 250 dollars a month for supervisors on February 5, 1938

Don Searle had taken over at a time when KFAB programming and that of CBS was on the rise.

KFAB Listener Card featuring Lyle DeMoss. (1934)

Locally, Lyle DeMoss hosted a successful 45-minute morning show in the mid-1930s, *Time N Tunes,* with Milan Lambert at the keyboard, running weekdays in the 7:00 hour.

Country music was unabashedly called Hillbilly music and was an up-tempo staple for morning shows almost industry-wide. Lyle's lead-in program was *Corntassel Carnival* at 6 a.m., a one hour show featuring a variety of live performers such as the Texas Rustlers, Emmy Lou, and Irma and her Fiddle.

In 1936 *Carnival* was replaced by Slim Everhart "The Singing Cowboy from Texas" singing "cowboy ballads and hillbilly tunes." Between radio and personal appearances with his band, Everhart became a Midwest fixture. His radio career continued at WOW 590 in 1947, winding down with a DJ stint at KOOO 1420 in the 1960s.

Texas Mary (Mary Marsich) started at KFAB in 1938 and stayed for 46 years. She had her own 15-minute show into the 1950s and for a while she was a major draw for KFAB's Eddie Sosby and the Radio Rangers group that she joined in the 1940s.

KFAB's Texas Mary Marsich

CBS became a success story and was beginning to prosper by the second half of the 1930s. The network had more affiliates and higher profits than those of NBC as early as 1935. The CBS prime-time lineup featured music, comedy, and variety shows, even though the more popular radio stars were still on NBC.

With full-day schedules and very little time sharing becoming the norm, daytime serials in quarter-hour episodes were proliferating in the mid- to late-1930s, sponsored by products aimed at housewives such as Spry vegetable shortening, Old Dutch Cleanser, Sealtest Dairy products, Anacin aspirin, and Rinso laundry soap.

Omaha listeners heard the infamous "War of the Worlds" broadcast by Orson Welles' *Mercury Theater* over KFAB on October 30, 1938. (KOIL had not yet switched networks and was still running NBC Blue.)

It's no surprise that listeners who missed the "War of the Worlds" disclaimers feared the worst. Radio news already had been providing updates and bulletins on the looming war in Europe. But no hysteria was reported in the Omaha area. There were 50 to 100 calls inquiring and one caller was angry, but apparently most listeners were elsewhere enjoying the highly-rated Charlie McCarthy on WOW/NBC at the time (*OWH* Oct 31, 1938).

A tribute to Father Flanagan in 1939 aired on *CBS Church of the Air* with KFAB the originating station on February 5th. The nationally heard program featured the Boys Town a capella choir.

Sister station KOIL in Omaha picked up CBS in April 1939. Though KOIL's signal overlapped that of KFAB, Central States Broadcasting promoted the pair as a combo buy. Ten-thousand watt KFAB, still licensed to Lincoln, was promoted "for Nebraska and her Neighbors" while 1000-watt KOIL was "for the Omaha Market." (*Broadcasting*, March 3, 1941)

Before contracting for exclusive rights in the 1980s, Husker football originated on three stations in Lincoln.

KFAB's association with the Nebraska Cornhuskers was solidified in 1939 when Lyle Bremser began Husker football broadcasts for KFAB. That was when the 20-year-old Bremser, a native Iowan attending the University of Nebraska, filled in for an ailing Harry Johnson to call his first Husker game. It soon became a permanent position with Bremser calling Husker games on the station for 45 years straight until retiring in 1984. During those years he rose to VP and GM for KFAB.

KFAB's ambitious plans didn't stop with synchronization and a power increase. Still to come in the 1940s was a semi-clear channel of its own with even more power and a move from Lincoln to Omaha.

KOIL 1260 Council Bluffs

KOIL began the 1930s with its 1000 watts on 1260 kHz, airing shows from its Hilltop Studios on the eastern edge of Council Bluffs along with shows from the still-struggling CBS network. The station entered the broadcasting biz realtively late, signing on in 1925, but made up for it with an impressive list of "firsts."

On October 12, 1930, KOIL began the first regular weekly national network program to originate in Omaha and Council Bluffs. It was an ambitious 30-minute music feature for the CBS network's 70-plus stations featuring the 35-piece Barnsdall Symphony Orchestra and vocalists. (KOIL's owner, Monarch Oil, was by this time a subsidiary of Barnsdall Oil.)

The show ran on Sunday evenings at 9:30 p.m. It opened with the announcement, "this program is coming to you from the Omaha and Council Bluffs studios of the Columbia Broadcasting System." (*OWH* Dec 7, 1930). The orchestra played a mix of pop and classics. Announcements between selections were read over live organ music, the organist carefully starting in the key of the concluding piece and modulating to the key of the next.

The orchestra had a busy rehearsal schedule of four or five per week, each at least two hours. Performers were being paid, unlike earlier years where volunteers filled the schedules. KOIL's annual expenditures for entertainers was $60 thousand by this time.

KOIL was also the first in Omaha to produce local, original radio dramas. *KOIL Krime Klan* debuted in 1930 and lasted into the 1940s. Don Searle ran ads in regional and national publications seeking original radio plays with a playing time of 25 to 30 minutes and a cast of not over five characters. Actors were paid a dollar to $1.25 per show (*Broadcasting,* Nov 15 1931).

Harold "Had" Hughs, one of the original announcers from KOIL's first days at the Hilltop Studios, was producer and director of the weekly drama. He also performed in some of the productions. Hughs said he was paid about ten dollars for each script. Actors who were vets of the Community Playhouse got three or four dollars a show. They included locally-known broadcasters Henry Kelpe and Virgil Sharpe.

In its early years, *Krime Klan* followed *Amos 'n Andy,* a strong lead-in show on NBC Blue. KOIL originally carried *Amos 'n Andy* in 1928 when it was the first radio program to be distributed by transcription in the U.S. It was produced at WMAQ Chicago and distributed to 70 affiliates. NBC Blue picked up the program in late 1929 after which it still aired on KOIL until the station dropped NBC Blue in 1931.

KOIL Omaha studio, 1931.
Control room looking into the main studio at the "broadcasting bungalow" atop the Brandeis Building.

To make visiting the station easier for traveling artists and bands, a second and larger Omaha studio to replace the smaller 1928 one-microphone setup in the Fontenelle Hotel was announced in late 1930 (*OWH* Nov 28, 1930). It was to be atop the Brandeis Building downtown in a bungalow formerly occupied by E. John Brandeis who had it built in 1921.

The bungalow was transformed into KOIL's new Omaha studios with a Spanish-style reception room and two soundproof studios, one of them big enough to hold a 75-piece orchestra.

The new “broadcasting bungalow” went live on March 13, 1931 with a special program featuring an address by H. A. Searle, president of Mona Oil.

The studios were then placed in service for evening and Sunday broadcasts while the Council Bluffs Hilltop Studio was used for morning and afternoon broadcasts. By now, KOIL was broadcasting 18 hours a day.

(Brandeis, pronounced BRAN-dize, at 210 South 16th Street was a downtown centerpiece, the city’s biggest and busiest department store with ten levels. The toy department on the tenth floor was especially busy at Christmas time when Santa came to visit. Earlier in the 1920s, for five years the tenth floor housed one of the few high-end restaurants in the city. Brandeis closed in 1980. The 1906 Brandeis Building remains today as apartments and various street-level shops.

(Coincidentally, years later in the late 1970s, KOIL morning personalities Terry Mason and Clay Michaels would do their Saturday morning show from a makeshift spot in Brandeis, though no on-air recognition of the historical significance was noted.)

After just four years with the network, KOIL dropped CBS and snatched away the more popular, at the time, NBC Blue network that had been airing on Lincoln’s KFAB. The switch was announced in October 1931 and took place in December. KFAB remained silent on plans after its loss of NBC Blue, but would soon pick up the abandoned CBS chain.

The Blue network was a stepchild to the Red which was airing over WOW 590. Blue had more orchestral and public affairs programs. The Metropolitan Opera radio broadcasts began in 1931 primarily as Saturday matinees and became a staple of the Blue network. Later, Blue became the original home of the NBC Symphony Orchestra broadcasts starting in 1937 led by Maestro Arturo Toscanini.

(The NBC Symphony aired from Studio 8H in Rockefeller Center until 1950 when it moved to Carnegie Hall. Studio 8H was converted into a television studio, and later became the broadcast home of *Saturday Night Live* starting in 1975.)

For entertainment, Blue was often a proving ground for the Red network, developing shows such as *Amos ‘n Andy* starting in 1930 and Jack Benny in 1932.

Mona Oil advertising always included a plug for its radio station, noted here in the lower right corner.

For news and comment, the colorful and opinionated Walter Winchell joined NBC Blue in 1932 as did Lowell Thomas, both coming over from CBS. They were among Blue's highest-rated programs as the decade progressed.

A year later in December 1932, KOIL's GM and visionary Don Searle resigned. Rather than returning to the family oil business which was in a decline thanks to the Depression, Searle stayed in broadcasting and moved to WIBW Topeka.

Searle's resignation signaled the start of the end of Mona Oil's ownership of KOIL. The Great Depression was hard on the oil company. Before the crash the oil complex was expanding down Sixth Street in Council Bluffs. Barnsdall Corporation came into the picture with support and finally acquired Mona Oil in 1932. In 1933 Mona Oil leased KOIL to Union Holding Company of Lincoln, a duopoly that also owned KFAB and KFOR in the Lincoln market.

Searle's replacement was John M. Henry, a Council Bluffs newspaperman who had been working his way up the ranks at KOIL starting out as Studio Supervisor.

The Depression hit its depths in 1933. In an effort to generate revenue, KOIL began selling time to associations of barbers, beauticians, florists, grocers, druggists and other trade groups whose members bought collectively what they couldn't afford individually. This was innovative at the time when programs were funded by single sponsors.

KOIL's ownership changed in November 1935. Union Holding Company in Lincoln had just incorporated a subsidiary, Central States Broadcasting System, to run its stations KFOR and KFAB. Within weeks Central States purchased KOIL after two years of its being leased by Union Holding.

The Central States duopoly thus increased to three, adding the Council Bluffs-Omaha market to its Lincoln stations KFAB and KFOR. KFAB manager Dietrich Dirks headed up the duopoly for Central States but KOIL management remained with John Henry who would report to Dirks.

KFAB and KFOR had Omaha studios in the Omaha National Bank Building but there was no rush to move KOIL in with them. KOIL's studios stayed put for another two years until the Hilltop Station in Council Bluffs completed its transmitter move to Lake Manawa. The studios then were moved out from the hills of Council Bluffs into downtown Omaha. KOIL's Brandeis Bungalow studio was no longer needed.

1260 KOIL Omaha (1936-)

Despite the Depression, KOIL continued to grow in 1936. Its new owners ambitiously went through an identity move from Council Bluffs to Omaha, gained a second national network affiliation, and built a news operation that would include one of the first mobile news units in the country.

After years of airing a dual-city station identification to include the larger Omaha as part of the Council Bluffs market, KOIL was permitted to officially become an Omaha station, doing so without fanfare on September 22, 1936.

Making the move possible was the repeal of a section of the 1927 Federal Radio Commission's enabling act designed to see that radio stations were equitably distributed. The complex and eventually controversial provision was repealed on September 22 allowing stations that already had auxiliary studios in the larger city in its coverage area to make it the main studios with no more equivocation in the legal ID. Omaha officially became KOIL's community of license.

(The two other stations immediately affected were WEBC moving from Superior WI to Duluth MN and WJSV from Alexandria VA to Washington, DC. Community of license moves otherwise generally require proving its necessity before gaining federal approval.)

The following year KOIL's Hilltop Studios moved from Council Bluffs to Omaha. The three Central States Broadcasting stations now occupied two floors of the Omaha National Bank building. KOIL's Brandeis Bungalow studios were shut down. (The Omaha National Bank Building, built in 1889, was originally known as the New York Life Insurance Building. It was renamed in 1906. The building was saved from demolition by rehabilitation in 1978.)

KOIL also added a second network that year, signing with the fledgling Mutual Broadcasting System. It was part of an expansion of the new, two-year-old network that included KFOR among five new Midwest affiliates.

Mutual Broadcasting relied on affiliates for its programming and KOIL joined in. KOIL produced a news dramatization show called *Parade of News* that was fed to the network's affiliates.

National feeds from the Omaha studios went by phone line to its Lincoln network switching center in the basement of the Stuart building. From there, the feeds were sent out to the national affiliates.

Engineer Al Smith explains the network switching system at the Lincoln center: "Both stations (KFAB and KFOR) shared the same studios. To complicate matters, certain programs were sometimes fed to station KOIL in Omaha.

"Switching was accomplished by a preset system managed by a single operator in Master Control. The necessary changes were set up ahead of time and were accomplished, at the proper moment, by the push of a button."

Engineer Percy Ziegler joined KOIL in late 1936 when the station was producing numerous live programs. Ziegler was always amazed by radio and studied radio engineering in Milwaukee before joining the Central States KOIL-KFAB-KFOR duopoly at its Omaha studios. Ziegler said for 75 dollars a month, hours at the station were long, sometimes 7 a.m. to 11 p.m., but nobody complained during the country's Great Depression years.

Ziegler helped produce the *Parade of News* dramatization and KOIL's popular *Krime Klan* programs by providing the sound effects. He recalled *Krime Klan* was the most popular show on Saturday nights. Surprisingly there's no record that *Krime Klan* was ever fed to the Mutual network to air nationally.

Ziegler moved to KOY Phoenix in 1944 when KOIL was sold, but returned to Omaha in less than a year. He worked at KFAB's Omaha studio with Lyell Bremser. Ziegler later moved to WOW where he became Johnny Carson's engineer and on-air sidekick.

News was gaining a higher profile on radio in the mid-1930s and Central States Broadcasting went all out. The duopoly built a news department claiming in ads to be the first in the Midwest to install an organized newsroom with "a battery of teletype machines."

It also claimed to be the only station in the Midwest with a mobile broadcasting unit, calling it a radio studio on wheels.

Besides covering news events, the news unit and its KOIL microphones would regularly meet the trains, the buses and the planes for informal interviews with celebrities who paused at the Union station and Muny airport.

16 times every day

The News of the World

Passes in Review at Two Places on Your Dial

KOIL 1260 Kilocycles **KFAB** 770 Kilocycles

The most complete radio news service in Nebraska—prepard and edited by the Central States News Bureau—the largest radio news staff in the middle west—and broadcast by those veteran air reporters

Bob Cunningham

AND

Emerson Smith

To hear the latest, most complete news, clip this KOIL-KFAB news schedule and place it near your radio.

KOIL-KFAB NEWS PERIODS

6:00 A. M.	First News of the Day	KFAB
6:45 A. M.	News Flashes	KFAB
7:30 A. M.	Ten Minute Period	KOIL
9:00 A. M.	Morning Edition	KOIL
9:50 A. M.	News from Radio Row	KOIL
10:00 A. M.	Mid-Morning News	KFAB
10:35 A. M.	Iowa Hour News	KOIL
12:15 P. M.	The News at Noon	KOIL
1:35 P. M.	Stephen D. Cartwright	KFAB
1:30 P. M.	First Afternoon News	KFAB
5:00 P. M.	Sports Review	KOIL
5:00 P. M.	Late Afternoon News	KFAB
6:30 P. M.	First Evening News	KOIL
10:00 P. M.	Late Evening News	KOIL
10:10 P. M.	Behind Page One	KOIL
10:30 P. M.	Stephen D. Cartwright	KOIL

September 7, 1936, KOIL/KFAB ad with newscast schedule (courtesy Omaha World-Herald).

In September 1936 President Roosevelt held his drought conference in Des Moines. The KFAB-KOIL-KFOR mobile unit was sent to Des Moines to cover the parade. The Des Moines coverage was relayed to 50-thousand watt WHO 1000 Des Moines for broadcast, which in turn was picked up over the air by KOIL for rebroadcast. From there KOIL also fed the program to KFOR Lincoln via phone lines. KMA Shenandoah and WOC Davenport also received the mobile unit's coverage via phone lines for broadcast.

A 1936 ad promoted sixteen newscasts per day between 6 a.m. and 10:30 p.m. over KOIL and KFAB, claiming the "largest radio news staff in the middle west."

The news staff featured veteran reporters Bob Cunningham and Emerson Smith. Cunningham soon joined the production staff of CBS, Smith went on to NBC.

Newsman and commentator John Edwards was heard in the 1930s on KOIL. He was a University of Nebraska graduate who later joined CBS in 1938, then becoming ABC's Washington reporter covering numerous events from 1945 to 1963.

One of KOIL's prime news broadcasters for several years was journalist William O. Wiseman who worked under the professional name of "The Globe Trotter." Wiseman came over from the *Omaha Daily News* where in the 1920s he edited one of the nation's first weekly radio columns. He remained with KOIL until joining WOW in 1937.

(Wiseman's long and lustrous career spanned 44 years. At WOW he became manager in 1960, and even added management of WOW TV channel 6 to his responsibilities.)

Photo of a 1930s poster promoting John Edwards on KOIL.

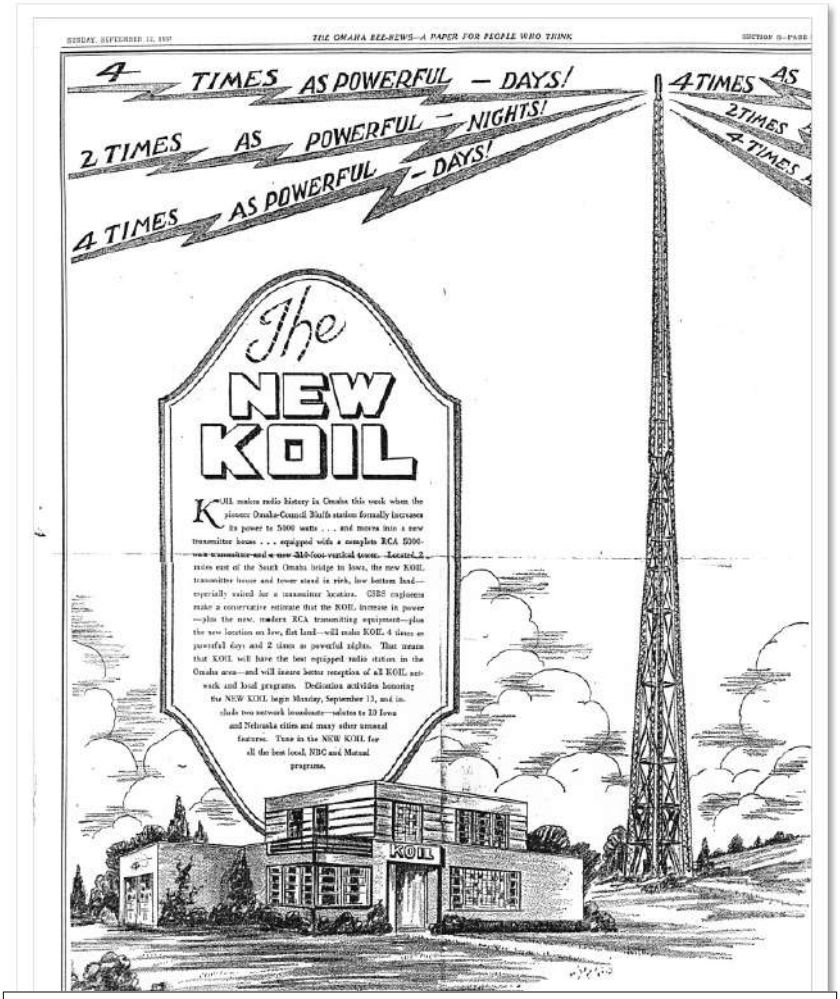
Leading up to the mid 1930s, a new site for KOIL's transmitter facilities with a higher power was being prepared. The construction permit for the move and new transmitter came in July 1934. It would be another three years before completion.

Plans for the new transmitter and tower were almost revolutionary. Broadcast engineering had advanced and it was now understood that high hills aren't necessary for launching radio signals into the air, and that open land works better.

Flat top antennas were being replaced by vertical towers, their full lengths acting as the antenna radiators. KOIL's engineers selected a few acres of flat land about two miles east of the Missouri River. It was near Lake Manawa along the South Omaha bridge road, just west of the rising bluffs.

A 310-foot self-supporting tower rose on the site. The transmitter building was a modern two-level brick structure where a new RCA 5000-watt transmitter would be installed. The unit model was so new that its serial number was "one."

These ambitious expansion plans may have been partly funded by the NBC network. A 1936 NBC publication, "Great and Growing Greater," described efforts to increase both the size and quality of Blue Network stations. Among the improvements cited and proposed was expanding the daytime power of such stations as KOIL, KWK St. Louis and KSO Des Moines. NBC Blue clearly wanted better



KOIL's new Lake Manawa transmitter site depicted in a newspaper ad, September 1937 (courtesy Omaha World-Herald).

facilities in Omaha and by some accounts paid for KOIL's new 5000-watt transmitter in order to increase the station's daytime power.

The media was invited to preview the new transmitter facilities about a week before the station switched them on. It was a sweltering September day and the air conditioning was not yet completely installed. About 40 newspaper editors and publishers were given a tour following a midday dinner and speech by manager John Henry in the building's basement.

Chief Engineer Mark Bullock explained how the rich ground system in the river valley increased the signal reach even further than simply the increase in power. Guests seemed to marvel most over the tower and its electric eye that turned on the tower lights when darkened by somebody's hand (*Plattsmouth Journal,* September 6, 1937).

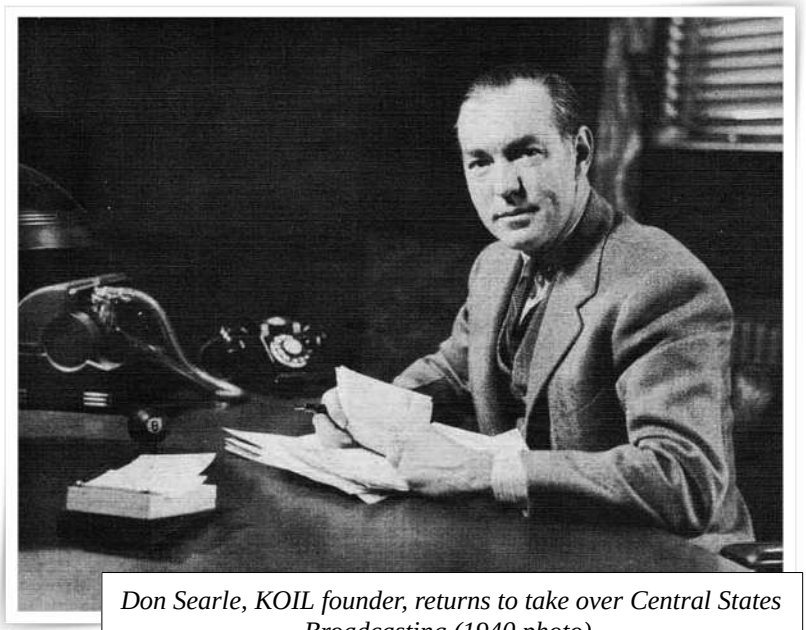
The old flat top antenna strung between the twin towers in the Council Bluffs hills made its last transmission on the night of Sept 12, 1937. The new RCA transmitter at Manawa lit up the next day, airing the morning show, the *KOIL Musical Clock.*

Upon completion of the new transmitter site, the Council Bluffs studios were moved to Omaha joining sister stations KFAB and KFOR.

The KOIL building that once proudly housed the Hill Top studios and transmitter in Fairmont Park remains today as an apartment building. The concrete bases for the KOIL towers remained for decades in the deep underbrush across from the building on now-paved Huntington Avenue.

Shortly after the KOIL upgrade, John Henry resigned and Don Searle took over Central States Broadcasting. It was a return for Searle who had left the station for WIBW Topeka in 1932.

Searle and his family once owned KOIL, putting it on the air in 1925. Since then KOIL's staff expanded from three engineers and five announcers/salesmen to an employment roster of well over a hundred. (*OWH* Sept 12, 1937).



Don Searle, KOIL founder, returns to take over Central States Broadcasting (1940 photo).

Searle would lead the KOIL-KFAB-KFOR duopoly until leaving for a position at KGO San Francisco in 1943.

Just days after signing on with the new transmitter, KOIL provided NBC Blue the pickup for the national feed of the Red Nichols Orchestra for two evenings performing live at the Electrical Exposition at City Auditorium on September 14 and 16.

KOIL's programming lineup drew from NBC Blue, Mutual Broadcasting, and a talented in-house staff. The morning show *The Musical Clock* began its five-year run in 1935. Morning personality Harvey Twyman joined KOIL in 1938 as a morning news reader for the show, soon taking it over as host, bringing along his sidekick rooster named Herkimer.

KOIL personality Harvey Twyman and rooster Herkimer on "Musical Clock" morning show.

Twyman stayed with KOIL until 1942 when he joined the Coast Guard becoming a radio correspondent. He received a purple heart while covering the Iwo Jima landing. Twyman returned to Omaha as PD of KOAD FM in 1946 before moving on to KGO San Francisco.

Following Twyman's morning show came programs for the midday housewife audience. Martha Bohlsen's show, *Martha's Homemakers Club of the Air,* later renamed *Martha's Cupboard*, ran twice weekly starting in 1938. Bohlsen did shows on both WOW 590 and KOIL 1290 and later on KOWH 660 as well. Bohlsen was a home economist for the Nebraska Power Company which sponsored her air time on the stations until 1949 when she went out on her own, adding television to her accomplishments.

Before Bohlsen came Belle West from the *Bee-News* where she wrote a shopper's guide column.

Belle West made her first radio appearance in 1922 as part of the West Sisters Quartet, singing over WAAW. She recalls being unimpressed with being part of the pioneering station's broadcasts, only that her family listened on a crystal set at home and were quite excited. It wasn't until a telegram from a Kansas City listener arrived that the significance dawned on her.

Belle joined KOIL hosting *Lets Go Shopping With Polly* in late 1937. Later renamed *Polly the Shopper,* West's midday show focused on fashion and furniture, leaving the cooking and kitchen tips to Martha Bohlsen.

Belle West

West would personally make the rounds of shops and tell of bargains along with hints for easier homemaking. The witty and self-assured Ms. West sold commercials, wrote the copy, and delivered the spots. A second show was added for afternoons in 1944.

Jean Sullivan from KOWH once filled in for a vacationing Belle West for two weeks and described *Shopping With Polly* as a string of fifteen commercials in the guise of consumer tips. Sullivan in a *World-Herald* interview said she was "appalled" and tried to keep the announcer from using her name in the show's introduction (*OWH* Oct 10, 1979).

West, as KOIL's "Women's Editor of the Air," also helped cover the annual AkSarBen Coronations that received splashy coverage in the newspaper and were frequently broadcast by local radio in the 1950s. She left radio in 1954 on her own as television began taking over and women's shows were being dropped from radio, though she would reappear briefly co-hosting sponsored programs such as a travel tips show on KMEO 660 in 1960.

In April 1938 Don Searle of Central States Broadcasting announced KOIL, after seven years with the network, would drop NBC Blue and rejoin CBS. The station would also sever connections with Mutual (*OWH* April 28, 1938).

The move likely was influenced by the gains in popularity CBS was enjoying, now having more affiliates and higher profits than NBC. Also, CBS was providing strong news coverage during this uneasy period leading up to a world war.

It was a full year before the network switch became reality. KOIL dropped NBC Blue for CBS on April 29, 1939.

With this, CBS on KOIL was duplicating her sister station KFAB in Lincoln, the latter having carried the now-popular network since 1932. Both signals overlapped much of the region, but owner Central States Broadcasting promoted the pair to advertisers as a combo buy.

10-thousand watt KFAB was trumpeted as "for Nebraska and its Neighbors" while 1000-watt KOIL was "for the Omaha Market." (*Broadcasting* March 3, 1941)

When KOIL made the initial announcement of dropping NBC Blue a year earlier, KMA in Shenandoah with its signal well-heard in Omaha, picked up the Blue network on May 1, 1938. A month before KOIL officially made the switch to CBS, KMA applied to move its community of license to Council Bluffs indicating that the purpose was to have an NBC Blue outlet in the Omaha area to replace KOIL.

Instead, NBC Blue was picked up by the *World-Herald's* newly purchased KOWH 660 (ex-WAAW). However, KOWH being a daytimer was unable to air NBC Blue's evening entertainment lineup.

KMA dropped the application for a move and adjusted its claim of being the area's only NBC Blue affiliate, replacing it with being Omaha's only *full-time* NBC Blue affiliate.

KOIL continued to contribute feeds to the Mutual Broadcasting System. The station covered the film premiere of *Boys Town* for the network on September 7, 1938. It was likely because Father Flanagan of Boys Town had a strong affinity for KOIL and insisted that only KOIL's microphone (an RCA 44BX with a KOIL mic flag) be on the stage. Other networks were forced to take the audio from KOIL.

Father Flanagan welcomed the Hollywood party to Boys Town that Wednesday evening in a ceremony carried live from Boys Town on the western edge of Omaha. The event was fed to 107 MBS affiliates.

Barbara Stanwyck interviewed at the Omaha premiere of "Union Pacific."

KOIL continued to originate programming for Mutual in April 1939 when Cecil B. DeMille's *Union Pacific* premiered in Omaha. As part of Union Pacific's four-day Golden Spike Days celebration, KOIL presented a historical dramatization of the Golden Spike ceremony feeding it to 141 Mutual stations on April 26.

Both KOIL and WOW covered the film's premiere ceremony as the stars Barbara Stanwyck and Joel McRae arrived at the Omaha Theater downtown at 1506 Douglas.

(The competition was legendary at the 1939 Oscars. Films included *Gone With the Wind* and *The Wizard of Oz*. *Union Pacifi*c came up getting only a nomination for best special effects.)

(The Omaha Theater was quite ornate. Above the marquee were arched windows rising three stories, framed by four groups of Corinthian columns. The Beaux-Arts style building was demolished in 1980).

The Boys Town graduation on June 4 was fed by KOIL to over 105 Mutual stations. The 2:30 p.m. program began with the Boys Town choir followed by comments from Father Flanagan and the commencement address by New York columnist Charles Driscoll (*OWH* June 2, 1939).

1940 KOIL program promotion on taxi.

As the decade drew to a close, KOIL was still growing. A plan for increased power at night using Omaha's first-ever directional antenna system was underway, and a switch to a new national network was close behind that. KOIL was poised to continue its major role in Omaha radio into the 1940s and well beyond.

KOIL studios control room in 1940. Harvey Twyman is the announcer behind the glass.

KICK 1420 Carter Lake, Iowa (1933-1934)

A fifth station moved into the Omaha-Council Bluffs market in the early 1930s. It lasted for just over a year. KICK was moved in from Red Oak, Iowa to Carter Lake, Iowa by two merchants who bought the station at a fire sale price. A year after the move KICK sold out to a Davenport pioneer broadcaster who wanted the license in order to return his Eastern Iowa station to the air.

Carter Lake is an unusual part of Iowa, a thumb of Iowa land existing on the Nebraska side of the Missouri River which historically is the official state line. When the river shifted course during the floods of 1877, the receding waters left the Saratoga Bend stranded on the Nebraska side. This bend of water remains as Carter Lake, an upside down U-shaped lake with a town of the same name developing on Iowa's land protruding into the horseshoe. The bend of water still marks the state line.

Iowa's shortest state highway, IA-165, runs just one-half mile crossing the village of Carter Lake. Today it's the main route Omahans take to the city's airport, travelers having to pass briefly through Iowa to get there.

KICK started out in November 1923 as KFLZ in Atlantic, Iowa, about 60 miles east of Omaha. It was an educational broadcaster licensed to the Atlantic Automobile School, running ten watts on 1100 kHz (RSB Dec 1923). The business plan was to broadcast weather, crop reports, and other news of rural interest to farmers (*Education's Own Stations* by S. E. Frost, Jr.).

Power was upped to 100 watts the following February and the call letters were changed to KICK that October.

KICK moved around starting in 1926. The station moved 14 miles east to Anita, Iowa (RSB Jan 1926). The following year the dial position was shown in listings as 650 kHz (RSB May 1927).

KICK was slated to move back to Atlantic in August 1927 but that was changed at the last minute when purchased later by Roy W. Anderson, manager for the Standard Bridge company of Omaha. Anderson moved KICK to Red Oak, about 30 miles south of Atlantic, the following month. The station was assigned 930 kHz with 100 watts to share the channel with WIAS Ottumwa, both stations now restricted to daytime operation (RSB Sept and Oct 1927).

Anderson set up his station in the east wing of the Hotel Johnson at 601 Sunset Road. The antenna was strung between a new tower constructed on the hotel roof to the dome of the courthouse across the street (*OWH* Oct 9, 1927).

KICK was listed for deletion in the 1928 FRC move to eliminate stations deemed less than necessary. Anderson appealed and won, allowing KICK to remain on the air.

KICK was moved to 1420 kHz with 1000 watts during the FRC's final band restructuring that fall, back on full-time status, though still dividing time with WIAS Ottumwa.

Mr. Anderson turned down an offer of 30-thousand dollars for the station in early 1932. Shortly afterward he committed suicide. The estate administrator put the station on the market at a much lower price and it was purchased for just 13-thousand dollars by Ben Elrod and Arthur Hiss of Carter Lake.

Elrod and Hiss owned a grocery store and gas station at 801 North 16th Street in Carter Lake. Mr. Elrod stated the station would not operate as an adjunct of their store but as a separate enterprise, saying, "We believe there is a place in this territory for a station that will give people entertainment by local talent." Elrod said they planned to make it "a home station." (*OWH* April 17 and May 7, 1932)

FRC conditional approval for the move to Carter Lake came May 6, 1932. Almost immediately came the howls of protest from the local stations WOW, WAAW and KOIL. Petitions were filed with the FRC to block the transfer. The filed briefs alleged that the applicant, the Red Oak Radio Corporation, was "incapable" from a technical standpoint of rendering service to the Omaha-Council Bluffs vicinity. The commission scheduled a hearing on the KICK application for that summer.

Opponents testified that another commercial radio station in Omaha and Council Bluffs would endanger the existence of the three radio stations already located there. Frank Manchester of the Omaha Grain Exchange, owner of WAAW, said his station had been profitable for two or three years but during the past year had sustained a loss of three hundred dollars. KOIL manager John Henry said his station is just about breaking even at this time, despite being on a national chain hook-up with NBC Blue. Also raised at the hearing was that a fourth station, KFAB in Lincoln, was competing for Omaha advertising dollars as well. (*OWH* Jul 16, 1932).

Broadcasting magazine noted this was the first time ever that an economic issue was raised as a protest to a station's sign-on (Broadcasting, May 15, 1933).

The court rulings and appeals delayed KICK's move by one year, the final ruling coming in May 1933. The Court of Appeals in the District of Columbia ruled that it didn't appear KICK's operation would curtail the advertising business of the present stations. With the FRC's September 1932 approval for the move now affirmed, a construction permit was issued May 23.

On the evening of June 12, 1933, KICK 1420 Carter Lake, Iowa signed on with 100 watts covering Omaha. A reception was held in the lobby of the Broadway Theater, 317 West Broadway in Council Bluffs. On stage the broadcast began at 8:30 with an address by Council Bluffs Mayor John Myrtue.

KICK started out with a curtailed schedule but was full time, 9 a.m. to 10:30 p.m. by September 1933. Studios and offices were in the Merchants National Bank building, a seven-story building on the northeast corner of 13th & Farnam in Omaha. (Both the Broadway Theater and Merchants National Bank have since been demolished.)

The program director was Grace Poole Steinberg, formerly with KOIL. Steinberg's main background was that of a vocalist. With her many contacts in the musical performing arts, her job was to find new talent for programs during the longer operating schedule. Female program directors were not uncommon in the 1920s thanks to this particular ability.

KICK received little respect. The *Omaha World-Herald* ignored KICK in its daily program listings, showing only the four major network stations, KOIL, WAAW, KFAB, and WOW. About the only ink the Carter Lake station received came in ads placed by politicos to promote their speeches on the station.

Verification stamp that KICK would send in replies to listener mail. Many stations offered EKKO stamps like this since the 1920s.

KICK did receive a mention in the newspaper when it carried the Creighton-Rice football game in October 1934. (Creighton University, long a basketball power in the Missouri Valley Conference, fielded a football team until 1942.)

KICK was on the air in Omaha for just a year and a half. During that time, it quickly became clear that the owners, Ben Elrod, Arthur Hiss, and now a third partner, William Shaw, were suffering losses, likely starting with the legal battles, and were seeking to sell the station.

After just a month of broadcasting, a deal to sell KICK to Union Holding Co., owners of KFAB and KFOR in Lincoln, was all but finalized. A takeover date was set for August 1. Speculation was that the company would use KICK to air CBS programming at night in Omaha to cover what KFAB was unable to do, thanks to its timeshare restriction with Chicago's WBBM. KICK's 100 watts could serve the Omaha market, while Union Holding's KFOR, with it's signal providing only Lincoln coverage, was filling the nightly CBS program gap there.

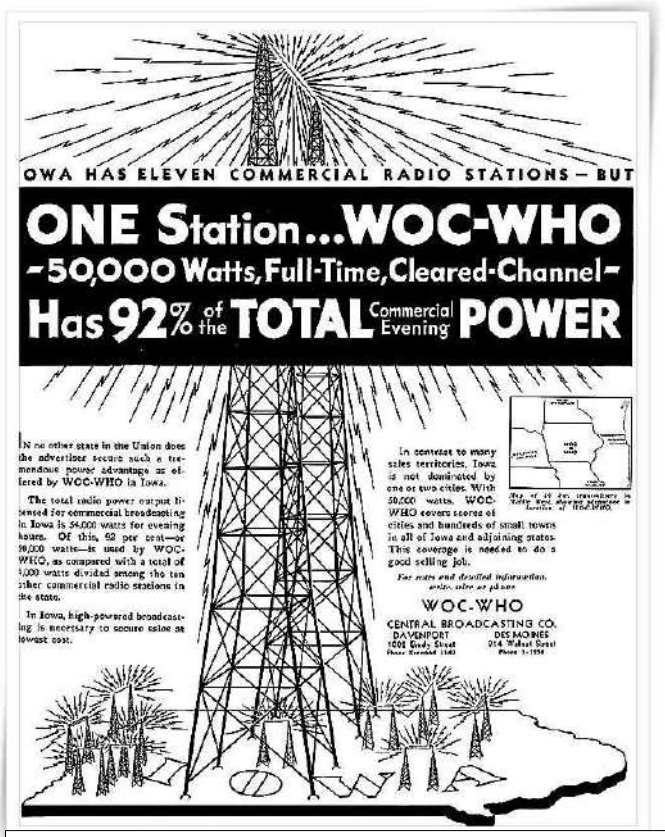
The deal for unknown reasons failed to close. Union Holding Company instead wound up entering a long-term lease the following month with KOIL Council Bluffs. Speculation about Union Holding wanting an Omaha CBS outlet went no further. KOIL kept NBC Blue and KFAB continued working on plans to synchronize with the Chicago station in order to allow nighttime operation, still months away.

Another buyer for KICK was soon found before the end of the year. The Palmer School of Chiropractic in Davenport, Iowa reached an agreement to buy the station for $16.5 thousand, wanting only the license. Palmer's plan was to move KICK across the state of Iowa, from the Missouri River to the Mississippi River, settling in Davenport.

Palmer's story had some interesting twists and turns in reaching this point. Bartlett Palmer's original station was WOC in Davenport, a pioneer station licensed to his Palmer School of Chiropractic in 1922, having morphed from being an experimental station dating back to 1907.

When the FRC's General Order 40 reallocated frequencies in 1928, Des Moines radio station WHO was forced to share time on WOC's frequency of 1000 kHz. A system was devised for simultaneous operation by synchronizing the same program on both stations.

It was a rather primitive system, using an operator at a monitoring station midway between the two transmitters. There, the beat note between the stations was measured and the WOC crystal oscillator was manually adjusted accordingly every ten minutes.



(© Broadcasting, April 1, 1933)

B.J. Palmer purchased WHO outright in 1930. Later in the year, he applied for a construction permit to increase WHO's power from 5 thousand to 50 thousand watts allowing it to take over the channel with one transmitter. Although the synchronization system was somewhat successful, that effort ended when the 50 thousand watts went into service.

The new 50 thousand-watt transmitter went on the air April 22, 1933. Both of the old 5000-watt transmitters in Des Moines and Davenport were silenced, and the single station in Des Moines on 1000 kHz became WHO-WOC. (Hyphenated call letters were not uncommon for station mergers or consolidations in the '20s and '30s.)

In the weeks after the new transmitter took to the air, the WOC studios and personnel which included a young Ronald Reagan were moved to Des Moines. This left the Quad Cities without WOC, its pioneer station. While WHO covered all of Iowa, Palmer felt his local Davenport audience (and sponsors) were not being served.

Palmer soon planned to return WOC to the air as a local Davenport station. He found a way by purchasing KICK's license and moving it across the state to make it WOC.

In December 1933 Palmer applied to the FRC for the purchase of KICK in Carter Lake. His application openly sought to move the station to Davenport, requesting the frequency be changed from 1420 to 1370 and the calls changed to WOC.

EXTRA IOWA RADIO NEWS EXTRA

November 1, 1934

W-O-C RETURNS TO DAVENPORT; W-H-O REMAINS IN DES MOINES

Mark These Points on Your Radio Map

FACTS ON W-O-C DAVENPORT

Studio Location—Davenport, Iowa
Transmitter Location—Davenport, Iowa.
Network affiliation—Columbia.
Time on air—Full time.
Wave—1370 kilocycles.
Power—100 watts.

FACTS ON W-H-O DES MOINES

Studio Location—Des Moines, Iowa.
Transmitter Location—Just out of Des Moines.
Network affiliation—NBC Basic Red.
Time on air—Full time.
Wave—1000 kilocycles.
Power—50.000 watts.

1934 Ad for the new WOC resulting from the KICK license transfer.

The unusual move was actually approved the following month on January 23, 1934. RADEX fans rejoiced. "Our older readers will recall the days when the old WOC at Davenport was one of the favorite standbys" (March 1934 RADEX).

In another month the sale was completed. But the move would be delayed for months as KSO Des Moines and WHBF Rock Island, Illinois filed protests.

FRC permission for the move came in September. From the November 1934 *RADEX*: "The FCC has authorized the removal of KICK from Carter Lake, Iowa, to Davenport The station belongs to the Palmer family of School of Chiropractic fame. It will sound like old times to hear WOC at Davenport, Iowa, again."

KICK's move across the state involved only the heart of the station: its license. Except for the frequency monitor, Palmer left KICK's equipment behind with former-owner Ben Elrod for a one-thousand dollars credit on the station sale price.

1420 kHz fell silent in the Omaha market in late 1934, still operating as late as November 5 according to program ads. Immediately, Omaha attorney William A. Schall applied to build a 100-watt station on the frequency using the equipment left behind, buying it from Ben Elrod for $1500. His business plan included hiring Elrod as manager and keeping engineer Merle Jones (*OWH* Oct 11, 1934 and FCC Docket 2648).

Schall's application was denied on February 25, 1936, the FCC noting the station's history of financial stress and saying it had proven unnecessary in the public interest. It wasn't until 23 years later that 1420 again lit up as daytimer KOOO operating from South Omaha.

Some post scripts to KICK's story:

• After moving from 1370 to 1450 in 1941, WOC landed by coincidence on KICK's old frequency of 1420 kHz in January 1943, where it remains in operation today.

• The KICK call letters vanished with the move to Davenport until 1949 when picked up by a station in Springfield, Missouri, which has kept them ever since.

• WOC added a sister FM station in 1948, and for the period of 1972 to 1989 used the calls KIIK calling it *Kick Radio*. It's unknown if this was done as a tribute to the Carter Lake station that returned WOC to the Quad Cities, but it's at the least quite a coincidence.

CLOSE-UPS and TECHNICAL

BROADCASTING TECHNICAL ADVANCES IN THE THIRTIES

Three major developments advanced broadcasting in the 1930s. A switch from horizontal antennas to towers, directional antenna arrays, and audio limiters.

Radio engineers discovered that height was not a factor in antenna placement, nor was it necessary to use horizontally oriented "flattop" and "cage" transmitting antennas strung between towers. It was found that instead, tall vertical towers, themselves being the radiating antennas, could be placed nearly anywhere as long as the ground conductivity at the tower site was good.

Tower height is best determined by matching it to the wavelength of the station's operating frequency. At low frequencies, this means very tall towers, but half-wave and quarter-wave heights are nearly as effective and were often constructed as being more practical and frugal. Radio towers began to appear all around the country.

This development quickly led to directional antenna systems. Through careful engineering it was determined that with a specific arrangement and spacing of two or more towers plus proper phasing of the signals fed to those towers, a station could manipulate its signal pattern into beams aimed in useful directions.

More importantly, this would provide a signal null in directions where beams are unwanted. This signal pull-back could be used to reduce or eliminate interference to other stations in those directions.

One other technical advance was the development of audio limiters. Since day one of broadcasting, an engineer had to monitor and "ride gain" for the outgoing program. For live shows as most were, this was simply sitting at the console and watching, anticipating, and adjusting the program's volume level so that sudden loud peaks wouldn't damage the transmitter, or as happened more often, simply kick the transmitter off the air.

Until limiters were developed, broadcast modulation (the loudness of the station's audio) was quite low on the average, about 25 percent. It took skilled engineers to keep audio at a constant level and to anticipate the program audio spikes.

The invention of the audio limiter in the mid-1930s not only eliminated the human gain rider on the board but kept the modulation level confidently in check. With this circuitry, modulation levels were allowed to increase to the 35 percent range.

In time, with more sophisticated limiters and audio compressors, modulation levels increased reaching 75 percent by the 1960s.

In the 1980s competitive modulation wars broke out among some stations. By this time some solid state limiters and compressors were driven so hard that there was little to no dynamic range in the audio resulting in listener fatigue.

RADIO RECEIVER ADVANCES IN THE THIRTIES

For the consumer, great strides in receiver technology were made in the 1930s despite the Great Depression. A multitude of brands were available: Atwater Kent, Majestic, Brunswick, Philco, RCA Victor, GE. Newer major brands included Sears Silvertone, Grunow, Stewart-Warner, Zenith, and Emerson.

Car radios developed by Motorola in 1930 became more widespread though remaining a bit of a pricey novelty. An RCA car radio promoting "radio—as you ride" was offered complete with installation at Sol Lewis, 20th and Farnam, for as low as 40 dollars.

The interest in international short wave broadcasting was heavily marketed as early as 1933, particularly in console models like RCA's "Globe Trotter" that promoted multiple bands for "all-wave world cruising." Even Omaha's KOIL briefly did some simulcasting on a shortwave frequency in the 6 MHz band.

Short wave listening failed to catch on in the U.S. Broadcasts from the U.S. to foreign audiences failed to become viable. Moreover, international listening to distant stations required more attention through the rolling fades and inconsistent reception. Primarily it became only the media, government, and hobbyists that pursued shortwave listening.

Other advances: Mechanical push button "touch tuning" that could be set for favorite stations proved to become a popular feature.

Sets with built-in record players were showing up in the latter half of the 1930s. Hand-carried portables with heavy internal batteries arrived around 1938.

Some advances may have been ahead of their time or were only for the wealthy. They included a multi-band radio-record player combo by Wilcox-Gay that had recording capabilities from the radio or with a microphone.

Philco offered perhaps the first ever wireless remote control device in 1939 with its "Mystery Control," a box with a dial that could change stations and turn the set on and off from any place in the room without wires, likely using audio tones outside the hearing range.

In cabinetry design, the spindly legs on floor models were giving way to floor consoles by 1933, and table model sets were styled into the Cathedral design, rounded with a pointy top. Consoles got heavier toward the end of the decade while table sets morphed into rectangular five-tube boxes, many with Bakelite (one of the first plastics) cabinetry.

Sets with metal tubes were pushed for a while, but metal didn't catch on as offering anything superior to glass tubes.

Retailers began marketing like car dealers, offering trade-ins on receivers and selling used sets. Besides department stores (Sears, Brandeis, Paxton & Gallagher, Peoples in Council Bluffs) and furniture stores (State Furniture, Penny's, Union Outfitting at 16th and Jackson), music stores like Hospe's at 15th and Farnam, and Schmoller & Mueller in Omaha / Council Bluffs became major radio selling outlets.

Other popular outlets included Sol Lewis at 19th and Farnam, Paramount Radio Shop at 20th and Farnam, Hodges Radio 24th and Douglas, Sidles at 19th and Howard, and in South Omaha, Allen Appliance at 24th and N.

KFAB and WBBM SYNCHRONIZATION

Matching up two stations 500 miles apart so that listeners in their signal overlap wouldn't suffer interference required cutting edge engineering in its time.

Getting the audio from Chicago to Lincoln took 23 milliseconds to travel over the phone lines. Some sources indicate the time delay was 26 milliseconds or 34 milliseconds. A later upgrade of phone lines did increase the lag time to 36 milliseconds.

For the audio delay, engineers wound up with a lengthy series of audio filters, coils, and condensers forming equalizers to correct frequency response loss, and no fewer than fourteen amplifiers to make up for circuit losses.

Until that device was finalized, the delay was achieved acoustically by sending the audio from a speaker down a 23-foot lead pipe. A dynamic microphone on the other end picked up the audio. From there it was sent through equalizers and amplifiers to achieve a substantially flat audio range of 80 to 5000 cycles. This system was used for about nine months.

The transmitters' frequency match was achieved by an audio tone over a dedicated phone line from the Chicago transmitter to the Lincoln transmitter. The tone variation would signal the distant transmitter to make any required ongoing frequency corrections.

In more technical detail, a transmitter's frequency is stabilized by a quartz crystal in the oscillator unit. A variable condenser wired in parallel with the crystal would fine-tune the oscillator frequency. At the KFAB transmitter, the condenser trim was controlled by a small synchronous control unit that made the adjustment according to the tone pitch from Chicago, keeping the frequencies matched.

Night time observations showed the synchronized signals performed beyond expectations, actually improving reception in the areas where the two signals meet. The major overlap was primarily in the Iowa and Illinois region between the two cities, but both stations had a good reach at night, overlapping in sky wave regions between Columbus, Ohio and Denver, and between Duluth and Tulsa.

THE NETWORKS IN A NUTSHELL

The Chains, as the networks were called, developed in the 1920s. David Sarnoff was first with NBC, the National Broadcasting Company. His network premiered with a live broadcast from the Waldorf Astoria in Manhattan on November 15, 1926. It was not aired in Omaha, the westernmost station being WDAF Kansas City. (The 1893 Waldorf was razed three years later to make way for the Empire State Building.)

NBC notably aired a special program over AT&T lines two months before its launch as a regular network. It was a one-time entertainment broadcast on September 15, 1926 while the RCA deal buying AT&T's WEAF and access to phone lines was pending. The show aired nationally on 43 stations. Interestingly, the Omaha station to carry it was KOIL. When the new NBC network launched upon the deal's completion two months later, it was without an Omaha outlet.

1927 Header for network program listings in the OWH. WEAF and WJZ were flagship/originator stations for NBC Red and Blue, WOR was the same for CBS, all from New York City.

NBC finally reached Omaha a year after its inaugural broadcast. By then it had split into NBC Red and NBC Blue, both initially carried on WOW 590. The more popular Red network stayed with WOW after Blue went to KFAB in 1929.

NBC also had the Orange and the Gold networks on the West Coast. They originated their own programs which may have used the scripts of east coast programs but with different performers. The shows came out of Radio City San Francisco, the studios of KPO/KGO, or station studios in Hollywood before Radio City Hollywood was completed in 1938. NBC's West Coast networks only existed for about two years, becoming unnecessary when the regular transcontinental connections to the Red and Blue networks came online.

1933 NBC Map

CBS followed NBC after almost a year. The Columbia Phonographic Broadcasting System inaugural broadcast on September 18, 1927 was heard in Omaha over KOIL in Council Bluffs, its westernmost affiliate. CBS didn't expand further westward for another two years. NBC reached the West Coast first, in December 1928.

CBS was originally United Independent Broadcasters, saved from bankruptcy by Columbia Records. The record company dropped out by the end of the year. William Paley took over, shortened the name and began a turnaround that developed into major competition for NBC in the coming decade.

KFAB resisted joining NBC Blue, instead opting for an upstart chain on the West Coast. It was ABC, the American Broadcasting Company, not to be confused with the modern-day ABC which appeared later in the 1940s.

ABC initially was set up to bring CBS to the West Coast by tapping the western end of the CBS feed at KOIL. Instead, the network took on a life of its own.

ABC owner Adolph Linden, a Seattle businessman and banker, had already spent thousands on his station in Seattle, KJR. He filled his KJR studios with a staff-heavy, all-live operation that featured in-house announcers, singers, a string quartet, a dance band, and a symphony orchestra. Soon his station was providing programming on the lines he had originally set up to tap into CBS. It became his own network, premiering on December 28, 1928.

ABC sounded more attractive than what NBC-Blue was offering. KFAB joined the network on June 1, 1929. By this time ABC was approaching 20 affiliates, the easternmost being in Chicago and St. Louis.

The network affiliation with KFAB didn't last even 90 days. ABC went silent on August 22 and two days later announced bankruptcy. KJR and the network had little income, thanks to inattention to local sales. Owners were banking on national sponsors which didn't arrive in time. KFAB joined NBC Blue on September 1, 1929, just nine days after ABC's demise.

ABC gave control of its leased landlines to CBS so the East Coast network could reach the failed network's Northwest affiliates. Shortly afterward, CBS made a deal with Don Lee in Los Angeles to add his California network on the remainder of the West Coast. With that, CBS became a full coast-to-coast network following NBC's lead by about one year.

Upon his network's failure, Adolph Linden drove to the East Coast when he heard Twentieth Century Fox Company of New York was interested in taking over and reviving ABC. He was on the road when the stock market crashed on October 29th. By the time he reached Manhattan, Fox decided it couldn't risk buying the Seattle-based radio network.

News then surfaced that Linden and his partner had been using IOUs from their bank for cash support that amounted to millions. They were both convicted of embezzlement and imprisoned in 1933.

The national networks grew, increasing programming hours and adding affiliates, boosting listenership and sales along the way. Those big voices and distant bands and orchestras now came into homes with local clarity. Network programming soon broadened to include comedy, drama, and variety.

As the 1930s began, networks were poised to usher in radio's Golden Age. At odds with the economic depression, networks blossomed and invested profits in improving coverage and reach. This was a boon to the affiliates, some even being the recipients of network cash for upgrading signals.

NBC Blue is said by some accounts to have financed a new transmitter and phaser unit for KOIL so it could increase night time coverage from Omaha. CBS assisted KFAB later in the 1940s in upping its power and finding a frequency on which it could do so.

Some stations still shared programming via regular telephone lines as they did before the national chains, and continued to do so, such as the Don Lee Network on the West Coast, the Yankee Network on the East Coast, The Dixie Network in the South and the Texas State Network.

In Iowa, KMA's line to WOAW that Earl May hooked up in 1924 forming very first network remained in operation into the 1930s when needed for feeds to and from Omaha.

Also in Iowa, a three-station hookup in 1935 that joined together KSO and KRNT in Des Moines and WMT Cedar Rapids-Waterloo formed the Iowa Broadcasting Company. The net produced an early morning show called *Tall Corn Time*. The two-hour show had a studio audience that rose early for the 5 a.m. broadcast. It was carried daily on KRNT and WMT (*Broadcasting* Jan 15, 1936).

In 1939 KMA boasted of a line to the Iowa Broadcasting System in Des Moines, though its degree of participation was likely limited to special events. (*Broadcasting* July 1, 1939).

Three-station ownership forming the Iowa Broadcasting System.

A de facto regional network was begun in the Midwest on March 9, 1936. It was the Corn Belt Wireless Rebroadcasting Service from WHO Des Moines. Stations within a 225-mile radius of WHO were permitted to pick up specific WHO programs from over the air and rebroadcast them. Rebroadcasting with the consent of the originating station was legal in FCC regulations. The net's first stations were WOC Davenport and KMA Shenandoah.

WOW contracted to air a program from the Corn Belt Wireless Network starting in 1936: *The Gene and Glenn Show* at 8 a.m. weekdays. A 150-foot long wire at the WOW transmitter site was stretched between two telephone poles in order to snag a clear signal using a high fidelity Western Electric receiver tuned to WHO 1000. Reception at the studio site would have been nearly impossible due to electrical interference from downtown neon signs and machinery.

KOIL Omaha and KFOR Lincoln also carried some programs from Corn Belt until November 1936. By then the two stations were owned by Central States Broadcasting, a duopoly that also owned KFAB, promoting itself as a three-station network but only as a marketing buy of the stations; there was no programming hookup between the stations.

Corn Belt Wireless' most popular program was *Coffee Pot Inn* sponsored by Omaha's Paxton and Gallagher product, Butternut Coffee. It premiered on October 28, 1937. The 15-minute morning feature of comedy, talk, and songs originated six days a week at WHO Des Moines.

(Paxton and Gallagher was an Omaha wholesale food operation that is best known for its Butter-Nut line of foods. Butternut Bread was a success but the big hit was the coffee, the brand launched in 1913 and still around today under the Folgers umbrella.)

Coffee Pot Inn was picked up off the air by WOW 590 and KFAB 770 Lincoln, as well as KMA 930 Shenandoah. At its height, the show aired on 11 Upper Midwest stations, including KSTP St. Paul, KMMJ Grand Island, WDAY Fargo, KFYR Bismarck, and WNAX Yankton. The four most distant stations in North Dakota and Grand Island leased landlines as they were just beyond the reach of a clear signal from WHO (*Rural Radio*, January 1939).

A fourth national network emerged in 1934 as a cooperative venture. Its programming would be produced by and shared between the group's affiliates. It was the Mutual Broadcasting System getting underway as a confederation of four major stations: WLW Cincinnati, WGN Chicago, WOR Newark-New York, and WXYZ Detroit.

The majority of Mutual's early programming came from WOR New York and WGN Chicago consisting of musical features and inexpensive dramatic serials. Among these was a smattering of popular shows such as *Lum and Abner, The Shadow,* and from WXYZ Detroit, *The Lone Ranger.*

When the two-year-old Mutual Broadcasting System went through a major expansion in 1936, KOIL was one of five Midwestern stations going online on September 27. KOIL's sister station at the time, KFOR in Lincoln, also joined.

KOIL became a Mutual contributor with the weekly *Parade of News*. Mutual also took KOIL's coverage of the 1938 world premiere of *Boys Town*, a film starring Spencer Tracy and Mickey Rooney and the 1939 premiere of Cecil B. DeMille's *Union Pacific*. Surprisingly, there's no record that KOIL's highly-popular weekly drama *Krime Klan* was ever fed nationwide on Mutual.

By the decade's end NBC Red, NBC Blue and CBS were the major national networks. CBS was slightly bigger, but National and Columbia each had a stable of stars, popular shows, and strong news departments. Mutual was about equal with the Big Three in affiliate numbers but lagged way behind in revenue as its affiliates were mostly small market stations or secondary stations in large markets.

RADIO WINS THE NEWS BATTLE

Radio newscasts first emerged more as gossip and commentary than hard news. The decade began with the likes of Lowell Thomas and H.V. Kaltenborn on CBS, and the shameless self-promoter Walter Winchell on NBC Blue. (Kaltenborn switched to NBC in 1940 from where he covered the war years.)

It was the 1932 Lindberg kidnapping and the media circus of the Bruno Hauptman trial that followed in 1935 that greatly raised radio's news profile. Also helping, the 1933 Roosevelt election returns were learned by radio audiences well before the ink dried on daily newspapers. This created a brief war between the two media, even though a full one-third of the country's stations were owned by newspapers by the end of the decade.

Newspapers retreated from the battle in 1934. Networks and stations began setting up in-house news departments. Radio news then evolved from the sensationalism, commentary, and showmanship of the early 1930s to serious reporting. The 1938 Munich agreement is often viewed as the turning point. Neville Chamberlain's speech appeasing Nazi Germany was a major wake-up call for a world that was careening toward war.

Breaking news in Europe became a catalyst for beefed-up network news departments. Those included Max Jordan on NBC, and Edward R. Murrow and "his boys" on CBS. As radio news reporting became serious and fact-oriented, objectivity became a concern.

Though networks dominated radio programming, 80 percent of radio's news was provided by local staffs in the days leading up to and during the war. KOIL and WOW became well equipped for local news coverage.

Remote pickup of events by radio was long sought to be an answer to the pricey phone lines of AT&T. Wireless links from remote sites were becoming more possible in the mid-1930s as technology advanced in making equipment smaller and more stable on the higher frequencies used for communication. Soon this technology would allow a practical, faster, and more flexible means of broadcasting outside the studio. Central States Broadcasting was the first in the market to make it a reality.

KOIL mobile unit, 1944

The unit was a panel truck equipped with a shortwave transmitter link (*OWH* ad June 3, 1936). The first vehicle was labeled with all three call letters: KFAB, KOIL, and KFOR.

The mobile unit was kept visible, used for spot news and especially at special events. KOIL mics would regularly meet celebrities for informal interviews as they arrived or passed through Union Station or Muny Airport.

The KOIL vehicles later had an open top cab where the reporter could stand and deliver live eyewitness accounts.

WOW soon followed with its own mobile unit by 1940 that included portable backpacks that would connect reporters on foot to the mobile unit for relay to the station.

INTERNATIONAL BROADCASTS FROM OMAHA- THE SHORTWAVES

In the late 1920s, Mona Oil's KOIL made itself available to international listeners via shortwave.

The long-distance capabilities of shortwave frequencies were just being uncovered thanks to ham operators who had been relegated to those high frequencies above the standard AM broadcast band. They quickly discovered the unique characteristics of this mysterious area of the spectrum that allowed distant transmission and reception.

KOIL began simulcasting on “low wave” on December 1, 1927 (RSB Sept 1927). The calls were W9XU, authorized on 4910 kHz with 500 watts. Chief engineer Gordon Anderson announced the station would be sending out the Columbia chain programs simultaneously on KOIL 1260 and W9XU 4910. These simulcasts were given no further publicity and likely didn’t last long.

Another attempt at KOIL’s simulcasting began in February 1929 on 6060 kHz. Manager Don Searle made the announcement that broadcasting would begin within two weeks. Searle made assurances that KOIL wasn’t planning to abandon the regular broadcast band but will program simultaneously, saying, “We expect to be heard and possibly re-broadcast in foreign countries.” (*OWH* Feb 22, 1929)

The transmitter, costing about five thousand dollars, had been ready for months while waiting for the new shortwave license. That Special Station license arrived in April 1929 (RSB March 1929) with the same call letters W9XU. It would operate on the assigned 6060 kHz with 500 watts. Ownership was listed as Mona Motor Oil Company, 1124 South 5th Street, in Council Bluffs.

W9XU soon signed on simulcasting KOIL’s programs. In the next thirty days, reception reports came in from nearly all states. W9XU became one of only a dozen such shortwave simulcast stations in the U.S.

The daily operating schedule was from 6 a.m. to 10 a.m., 11 a.m. to 2 p.m., and 5 p.m. to Midnight. The station carried everything aired by KOIL including whatever was aired from the Columbia Broadcasting System (*Radio Broadcast* Vol XV May 1929 to Oct 1929).

In May, the “King of Jazz” Paul Whiteman and his 30-piece orchestra arrived at Union Station on 10th Street in a luxurious nine-car train to give a free concert at City Auditorium. The concert was aired live on KOIL and internationally on shortwave W9XU.

One other experimental shortwave station was licensed in Omaha as early as 1928 but there is no indication of it ever reaching the air as a broadcast operation. It was Ronald J. Rockwell's W9XAB, described as a portable station relaying broadcasts. Rockwell was authorized 50 watts on 105 meters/2855 kHz (RSB Sept 1929). It was possibly for use as a remote pickup or for his own curiosity. But it was short-lived, deleted just four months later (*Radio News* magazine January 1929).

Long-distance broadcasting proved nonviable. Sponsors were uninterested in distant markets. What international products existed were more readily and conveniently promoted locally within the target areas.

NBC and CBS set up networks in South America and fed them their shortwave programming with equally little success. In the end, shortwave was merely a novelty or cultural tool until the propaganda value of international broadcasting was discovered toward the war years in the late 1930s.

It's likely KOIL's shortwave sister W9XU had a short run, gone perhaps in 1930. However, international high-power shortwave broadcasting continued to slowly develop through the decade with corporate ownership leading the way. Most owners and operators of note were the national networks and major electric companies such as General Electric and Crosley Radio.

The government took over the high power short wave transmitters at the advent of World War II. Shortwave would peak during the war and into the Cold War years, but by the end of the century the medium was giving way to local FM networks and the Internet.

An exception is Canada where well into the 2000s about a half dozen AM stations continued to simulcast on the shortwave 49-meter band (around 6 MHz) in order to serve that country's vast and sparsely settled regions.

Other countries in the tropical regions around the world are also exceptions, those stations simulcasting medium wave programs on short wave in the 60- and 49-meter bands. This was not only to reach remote areas but also because higher shortwave frequencies were less susceptible to lightning static crashes from electrical storms that are more prevalent in the tropics. However, few of these stations are left. Many governments and station owners allowed their short wave transmitters to deteriorate and close down as FM networks steadily expanded.

BEFORE FM- KOIL AND THE APEX EXPERIMENTS

In the immediate years before FM, engineers and designers were seeking ways to improve audio range and fidelity and to overcome the interference and static created by electric appliances and thunderstorms. The FRC set aside a band of high frequencies in 1932 where interested stations could experiment and lead the way.

These were the Apex experiments, using what were then deemed the “ultra high” frequencies of 30 to 42 MHz, hence the name “Apex.” This higher end of the radio spectrum experiences minimal static and permits a wider bandwidth, wide enough to allow a signal to broadcast more treble in its modulation range.

Central States Broadcasting System’s KOIL was the only Omaha station to give it a try. In 1938 the old shortwave calls were amended by the FCC to W9XUY and the station was assigned 30.1 MHz with 100 watts. Later listings put the dial position at 31.6 MHz. By 1939 Apex stations were licensed in 34 cities in 22 states.

Apex broadcasts received little to no public attention. Being experimental, few home receivers were marketed for this band. Several radio manufacturers began introducing receivers that could tune up to 60 mHz, but they were insensitive and unstable at those high frequencies. Outside of professional receivers used by station engineers and the FCC, it was mostly radio enthusiasts constructing their own receivers or converters who could monitor and assess Apex signals.

W9XUY was reported nationwide by amateurs and radio hobbyists. Notes would appear in *RADEX*, and other monthly magazines devoted to radio enthusiasts. They listed stations, carried articles on long-distance reception, and listed reader’s reports of DX reception. W9XUY was heard by numerous reporters from 1938 to as late as 1940.

One listener described receiving a printed postcard from W9XUY that confirmed his reception, describing the card, “Call(s) printed at top in black letters and transmitter control panel is shown in center of card.” (RADEX, Sept 1938).

Later, a listener’s experience in Hawaii was noted, “W9XUY on 31600 kcs in Omaha, Nebraska--KOIL programs--is actually on 31620 kcs. according to calibration of C. J. Fern of Hawaii, where they are heard regularly.” (RADEX April 1939)

(*RADEX*, an acronym for Radio Index, began as a magazine for broadcast radio listeners in the earliest days of network radio. By the end of the 1930's it had evolved into a magazine for shortwave and DX [ham lingo for distant] hobbyists and listeners. It ceased publication soon after the start of World War II.)

This unexpected long-distance reception contributed to the quick demise of Apex stations. It was found that the 30 MHz range on the upper edge of the shortwave bands would at times exhibit the same long-distance characteristics as shortwave, creating undesirable interference among Apex stations from different parts of the country.

The final blow in Apex's short time frame was the arrival of FM, the finishing touches being developed by Edwin Armstrong in the late 1930s.

Armstrong began regular commercial broadcasts from Alpine New Jersey in the New York City metro in 1939, six years after his initial FM patent. An FCC team of engineers assessing Armstrong's FM station W2XMN were impressed by its superiority to AM. It resulted in approval of 35 new FM channels above 43 mHz that included a takeover of TV channel 1 for FM radio. Also it was announced that FM would be the method used for television audio.

The new FM technology fully solved the problem of interference and fidelity. However FM had a long and rocky road ahead before acceptance. Efforts to grow FM were stymied by Armstrong's patent battles with RCA and soon were put on hold by the war.

Apex experiments were officially ended by the FCC in 1941, though very few stations were left in operation by that time. It's believed that KOIL's W9XUY station was off shortly after FM began making waves as there are no indications of its operation past 1940.

THE GRAND ISLAND MONITORING STATION

Along with growth came more regulation. Restructuring the broadcast band and licensing stations was the major push by the newly-formed FRC in 1927. To police the band, a method of monitoring was needed.

To enforce the new rules, the FRC opened a monitoring station near Grand Island, Nebraska. The open prairie and central US location were major factors in choosing the site. Ground was broken in 1929 and full-scale monitoring began by 1932.

The monitoring station listened for legal IDs, proper modulation, frequency tolerance, and would observe and resolve interference problems. The monitoring also included listening to the world on shortwave, anything up to 30 MHz.

The monitoring focus was on compliance rather than content. The Radio Act of 1927 addressed programming only to a degree. No official censorship was authorized beyond outlawing indecent language, but the Commission could take programming content into consideration when renewing licenses.

Rules regulating advertising were limited to ensuring that sponsor disclosure appeared within ads. Networks were not addressed except for the right to make special regulations applicable to stations engaging in chain broadcasting.

The Grand Island monitoring station was shut down in 1996, though kept partially in operation as an unmanned site operated by computer from the East Coast. The building was later placed on the National Historic Register.

THE SHENANDOAH STATIONS- KFNF and KMA REACH MATURITY

Signals from the two Shenandoah stations KFNF and KMA were strong enough so that they were considered semi-local peripherals to Omaha. Indeed it was Omaha that first influenced the Shenandoah broadcasters, and the stations' presence was always felt in Omaha to some extent thereafter.

As the heady, cash-cow days of the Twenties wound down, Shenandoah's two seed company stations entered the 1930's feeling the effects of the Depression. Catalog sales and the jubilees continued, but income and attendance dropped.

Henry Field lost control of his seed company during a foreclosure in 1933, though he continued as president of both the seed company and KFNF even after retiring in 1938.

KMA continued fulfilling its role in farm broadcasting. Earl May himself regularly delivered a 5:30 a.m. farm report.

An in-house weatherman was added at KMA in 1934 soon after a US Cooperative weather station was established at the station. A staff position of Farm Service Director was created in 1937. Henry Field's son, Frank, joined KMA as a meteorologist in 1940.

KMA's station slogan was *Doing the Most for Farmers* along with *Keep Millions Advised*. KFNF had three on-air slogans at this time: *Keep Friendly Never Frown, Known for Neighborly Folks,* and *The Friendly Station.*

Henry Field's noontime *Letter Basket* program was a longtime regular on KFNF. KMA offered *RFD 960, Kitchen Clatter* with kitchen tips and recipes, *Gardener's Club, Homemaker's Program, Farmer's Wife,* and *KMA Country School*.

Leanna Driftmeier broadcasting from her kitchen over KMA (1944 photo)

Radio homemaker shows were practically born at the Shenandoah stations. Field liked to press family members into service. His sister, Leanna Driftmeier, hosted *The Mother's Hour* in the 1920s which soon turned into *Kitchen Klatter* on KFNF. With no training, Leanna just talked about her home, family, recipes, tips, and advice on her afternoon show straight from her kitchen table at home.

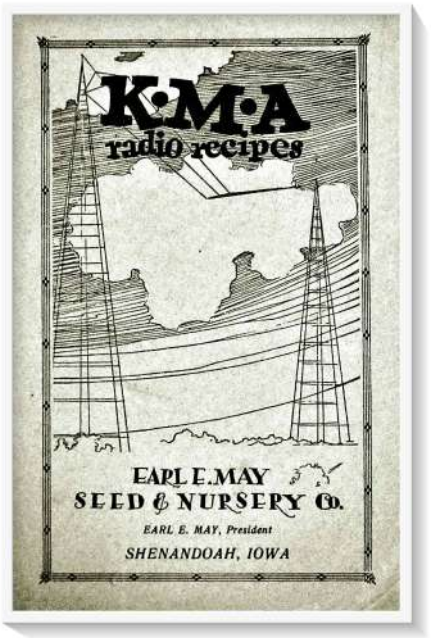
Klatter later moved to KMA in the 1940s and was syndicated throughout the region. A monthly *Kitchen Klatter* magazine with articles, letters, and recipes was published for years.

Though KMA could be heard in Omaha, KOWH 660 picked up the show in 1948 and KFAB ran it in the early 1950s. When KOWH later pioneered the Top 40 format replacing all block programming with records and DJs, *Kitchen Klatter* was the last to go, in 1953.

Radio pioneer Maurine "Billie" Oakley joined KFNF in 1949. She moved her homemaker show *It's a Woman's World* to KMA in 1953. After an interlude working for Gooch Foods as the Consumer Director in 1966, Oakley returned to KMA in 1976 doing her own show plus a call-in show for the next 11 years.

Oakley won the first annual *Marconi Award for Small Market Personality of the Year* at the 1989 National Association of Broadcasters convention in New Orleans. Holding her award she amused her audience with her acceptance speech telling how, in the earlier years, it was the men who would leave for the conventions by saying, "Now, you ladies watch the station."

Evelyn Birkby began hosting *Down A Country Lane* on KMA in 1950. She called it "neighboring on the air," meeting a need for those who were isolated by farm life. "We were just women who shared our lives," said Birkby. "We shared what we were doing with our families, what we were cooking, what we were eating."



Recipes figured prominently in homemaker broadcasts, with old-fashioned Midwestern fare focusing on meat and potatoes, hearty casseroles, cakes, and pies.

Successful programming aside, restricted air time and moving around the dial continued to plague KMA. As the station entered the 1930s it was sharing time on 930 with KGBZ York. In April 1931 as its license was being renewed for 930 with 1000 watts, 500 watts at night, KMA sought 710 kHz with 750 watts to get away from KGBZ. The move to 710 was denied in May 1932.

Trying again in June 1934, the newly-formed FCC (replacing the FRC) permitted KMA to move from 930 to 710, but objections from WGN 720 in Chicago forced its return to 930. Upon its return KMA ran 2500 watts during the day and gained approval to increase night power to 1000 watts in July 1934.

In 1936 KGBZ was denied a license renewal effective May 8. KGBZ was found to be irresponsible with stock sale promotions over the air while also charged with questionable medical broadcasts. The examiners noted the owner had been trying to sell the station and was under a purchase option to the *Omaha World-Herald*.

KMA's new tower, replacing the flat-top antennas at the seed company..

KGBZ was ordered to turn over it's shared air time to KMA. KGBZ won a stay order but it was withdrawn in July when KMA bought the York facilities for about $50 thousand gaining full-time operation on the channel. The time-share with KGBZ officially ended on August 4, 1936.

KMA was permitted to increase power to 5000 watts daytime and 1000 watts at night on November 10, 1936. With it came a major upgrade that involved moving the transmitter site from the seed company building to a site north of town.

A 488-foot self-supporting tower went up at the site and a new building to house an engineer and the new RCA transmitter was built nearby. The tower, with a triangular 24-foot base, tapered to 36 inches at the top where the tip could sway as much as four feet in strong winds (*KMA The First 60 Years* by Robert Birkby).

KMA joined the NBC Blue network in May 1938 when KOIL, Omaha's NBC Blue affiliate, announced it would be switching to CBS.

The Blue network pressured KMA management to move the station to Council Bluffs for better coverage of the Omaha market. KMA applied for the community of license change in early 1939, then dropped the plan a month later realizing its roots best remain as a farm station in Shenandoah.

KFNF then applied to make the same move for the same reason, but it soon became unnecessary when Omaha's KOWH 660 picked up NBC Blue in April 1939.

KOWH 660 was a daytimer, so Blue's evening line up was audible only on KMA, a point the station happily promoted as "the only full-time Blue affiliate serving Omaha and Council Bluffs."

KMA's influence on Omaha radio listening was shown when the station chose to hold its 14th birthday celebration at Omaha's Krug Park in July 1939. 25 thousand people from around the region showed up for the festival.

In 1939 Earl May sold a quarter of his station to B. J. Palmer's Central Broadcasting, owner of WOC Davenport and WHO Des Moines. May carefully ensured that the new owners would not interfere with his seed operations by first legally separating KMA from the seed company. Thus was born May Broadcasting, receiving FCC approval in 1940.

Immediately afterward, May once again tried to get the night time power increased from 1000 watts to its licensed 5000 watts daytime level, applying in June 1940.

May had applied once before in December 1936 to get 5000 watts full time right after winning the 930 channel to himself but was denied. Now with the new frequency of 960 kHz to be assigned in the coming NARBA 1941 frequency shifts, he renewed attempts to gain full nighttime power, this time utilizing the new technology of directional antennas to prevent interference complaints from neighboring stations.

Construction was approved in May 1942. The plan required the addition of two smaller 240-foot towers on each side of the tall tower in order to create a pattern protecting specific stations at night. The new directional system and full time 5000 watts was approved and became operational by summer 1943. (Two towers including the 488-foot center tower were toppled by a tornado on May 18, 1959. The replacement center tower lasted 48 years before it, too, was replaced in 2007.)

The NBC Blue network still pressured KMA to move into the Omaha market as late as 1942 then gave up, dropping KMA as an affiliate the following year. KMA estimated it lost $48 thousand in potential revenue with the decision to stay in Shenandoah, but it was now final with the new three-tower, 5000-watt nighttime signal.

As KMA and NBC Blue parted ways in 1943, NBC was divesting the Blue network following a government anti-trust ruling. The net became ABC, the American Broadcasting Company. ABC was picked up by KOIL in 1945.

Meanwhile, live performances at the Shenandoah stations were being replaced by records. A local mainstay for many radio stations since the 1920s, the last of the station artists were being struck from the payrolls in the early 1950s. On KFNF the fiddling contests faded out. On KMA, the end began when the station launched a hillbilly jamboree record show in 1951.

The Everly family was among the last to go. Ike and Margaret Everly had begun their weekly show on KMA 960 around 1945. When not traveling the summertime country music circuit, they stayed put in Shenandoah with a weekly show. After years of live entertaining on KMA 960, they went to KFNF but only for a short time before moving to Nashville. There, sons Don and Phil hit big with their harmonies enjoying a string of hits in the late 1950s and early 1960s as the Everly Brothers.

KMA's Mayfair theater, home of live broadcast entertainment since 1927, became a barn. Deemed unsafe, it was demolished in 1964. Modern studios were built across the street from the theater site on the spot where the Earl May Café once stood.

KMA continued as a successful family-owned operation for the rest of the century. After 94 years in the May family, KMA was sold in October 2017. It continues to operate as *Regional Radio* with farm information, news, sports, and weather serving the farms and small towns of SW Iowa and parts of Nebraska, Kansas, and Missouri.

Along the way, May Broadcasting pioneered in television. The company built KMA TV channel 3 in Omaha in 1949. Because of the different communities of license, the KMA-TV calls were disallowed and were changed to KMTV at the last minute before sign on.

Shenandoah's first broadcaster, KFNF 890, took a much different path during its maturity. The station was destined to go through different owners, and several attempts were made at moving it into other markets.

In August 1939 KFNF Inc. sought to move its studios and transmitter to Council Bluffs after having just opened a studio on Broadway in that city. In 1940 the *Omaha World-Herald* sought to buy KFNF 890 with intentions of making the newspaper-owned KOWH 660 full time on 890 with a power increase to 5000 watts. Neither of these efforts succeeded.

KFNF was moved to 920 during the 1941 NARBA frequency shifts, remaining at just 1000 watts day, 500 watts at night.

In 1947 KFNF, still owned by KFNF Inc., received a conditional grant for an FM station. The following year KFNF was sold to the newly formed Capital Broadcasting Company of Lincoln, Nebraska for $120 thousand. Capital Broadcasting was owned by C. J. Abbott, a cattle rancher in Hyannis, Nebraska.

The construction permit for the FM was still valid for the new owner but was soon abandoned as the nation's fledgling FM service proved nonviable at this time. Capital Broadcasting later applied to move KFNF from Shenandoah to Lincoln. The move was denied in early 1952 (*OWH* May 8, 1952).

In 1956 following the death of C. J. Abbott in a plane crash, his widow sold KFNF for $61-thousand, all but $525 of it being debt assumption, to the Farm and Home Radio Group. Farm and Home was owned in part by its president Don Searle, the same man who founded KOIL radio in the 1920s. By this time Searle's Farm and Home Radio Group owned KMMJ in Grand Island, KXXX Colby, Kansas, and KIOA Des Moines.

Searle said that the KFNF purchase was his first of several proposed additions to extend service to the Midwest farm regions. As part of his plan, control of KFNF was transferred shortly afterward to Farm and Home Radio's Executive Director William A. Martin in November 1956.

Searle's ownership lasted only a few years. KFNF was then sold to the Tedesco brothers of St. Paul in the fall of 1959. The brothers applied to move KFNF to Council Bluffs with a full-time power of 5000 watts and had already purchased land for the transmitter along Iowa State Highway 92 about four miles east of Omaha on the south side of Council Bluffs.

The move was approved by an FCC examiner in November 1962 but was denied by the FCC Broadcast Bureau the following January. The objection cited a profit motive for the move, contending that KFNF was seeking a larger Omaha audience at the expense of Shenandoah radio service. In 1967 Tedesco sold KFNF to Norseman Broadcasting.

KFNF finally was sold to Family Radio, a Christian broadcasting group in 1977, still just running 1000 watts. Calls were then changed to KYFR. Canned religious programming was fed from Family Radio headquarters in Oakland, California.

The station since has increased power to 5000/2500 watts, adding three towers for a directional array that provides different day and night patterns. The transmitter site is southeast of Shenandoah, near the town of Coin, Iowa, just three miles north of the Missouri state line.

CHAPTER FOUR- THE WAR YEARS

There was a shortage of trained technical people for the armed services and industry, and broadcast technical people were teaming up with local colleges all over the country to remedy this lack. Radio amateurs also helped the war effort in this way. --Al Smith, KFAB Engineer

Little growth in broadcasting was seen during the War years. Licensing was put on hold and manufacturing focused on the war effort. As during the earlier war, all amateur radio operators were required to dismantle their equipment for the government's possible use.

But unlike the earlier war, broadcasting was not silenced, although restrictions were put in place. Self-censorship was willingly accepted, set out in enforceable guidelines from the government.

The restrictions: No specifics were to air that may disclose any movement or activity by the military or government officials. Weather reports were halted, even weather references by sportscasters. The popular Man on the Street interview programs were suddenly gone for fear of information slip-ups or coded messages snuck in by agent operatives. Also gone were request programs where dedications, specific song titles, and requested times could be used for coded messages. Coastal stations were the major concern, but signals from the Midwest could also be heard anywhere and Omaha was not immune.

On the plus side, radio valiantly rallied around the war effort with public service messages on rationing, promotion of war bonds and scrap metal drives, and boosting morale with special shows, both on-air and on the road.

In Council Bluffs, electronics dealer Wholesale Radio Laboratories, after seven years in business, closed down for the war's duration in 1942. Owner Leo Meyerson said 90 percent of his business came from amateur radio operators. During the war, Meyerson formed Scientific Radio Products making crystals for transmitters, producing up to 40 thousand per month for the war effort.

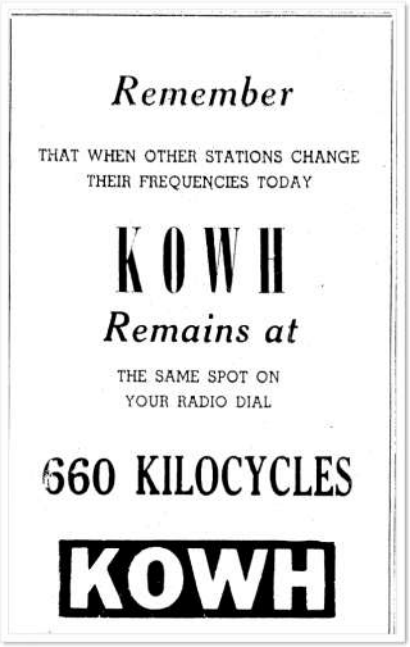
(Meyerson returned to radio parts and equipment sales after the war. The company name was changed from Wholesale Radio Laboratories to World Radio Laboratories in 1947. The business morphed into hi-fi and stereo sales in the 1970s. Meyerson retired in 1977 turning the company over to his son Larry until it was sold in 1988.)

Omaha got one new station as the war years commenced. KBON 1490 construction was already underway when the FCC put the freeze on new stations. The station's owners were allowed to complete construction and KBON signed on in 1942.

The first major change to the AM broadcast spectrum since the FRC frequency shuffling of 1928 occurred just before the war. The change came at 3 a.m. on Saturday, March 29, 1941.

The North American Radio Broadcasting Agreement (NARBA) had re-organized the band in a design to alleviate international interference. In negotiations since 1937, the signatories involved the U.S., Canada, Mexico, Cuba, Haiti, and the Dominican Republic.

Frequency shift reminders in ads placed by Central States Broadcasting and by KOWH, March 28, 1941 (courtesy Omaha World-Herald)



The agreement set up clear channels for Canada, the U.S., and Mexico. The plan required most existing AM stations above 720 kHz to move 10 to 40 kHz upward in order to make room for the new allocations. Of the 893 stations on the air, 802 were moved while 91 stations remained unchanged

The new dial positions are where they basically remain to the present day. The only Omaha stations not affected were WOW 590 kHz, and KOWH (ex-WAAW), the latter a daytimer on 660 kHz, its frequency designated a clear channel at night for New York City. KFAB was moved from 770 to 780, KOIL from 1260 to 1290, and soon-to-be KBON from 1500 to 1490.

As a bonus to broadcasters the 1941 NARBA agreement also extended the upper limits of the AM Broadcast Band from 1500 kHz to 1600 kHz. The band now stretched from 550 to 1600.

The lower end of the band was extended to 540 in the early 1950s. The NARBA agreement remained in effect until replaced with a plan to break up the clear channels in 1981.

KBON 1490 Omaha SIGNS ON

KBON got in just under the wire. It was the only new station to light up on Omaha's AM dial during World War II, receiving final FCC approval in 1942 just before war efforts geared up and licensing was suspended.

Owners MSB Broadcasting Company, a group of businessmen who held shares in Fremont's KORN 1400, pursued establishing the Omaha signal with 250 watts on 1500 kHz, originally seeking the calls KONB. The KONB construction permit was approved on June 25, 1940.

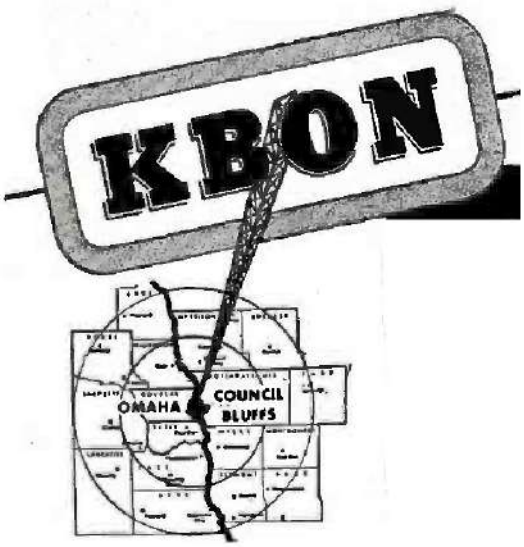
The 1500 kHz availability in the market had existed as early as 1936. Central States Broadcasting, owners of KFAB, KFOR and KOIL Omaha-Council Bluffs, saw this availability and applied for a new station in Council Bluffs on 1500 with 100 watts. That effort went no further (*OWH* June 27, 1936).

Much happened before MSB Broadcasting Company's new station reached the air. First, the NARBA frequency shifts of 1941 on March 29 moved the yet unbuilt station from 1500 to 1490.

Then that summer, KONB's construction permit was placed in jeopardy when the majority of MSB's shareholders looked to sell their controlling interest before the station got on the air, a practice frowned upon by the FCC.

When the shareholders learned how this was contrary to FCC policy, they applied to have the transaction withdrawn. The FCC granted the withdrawal, but not before putting MSB through a hearing on the matter.

KBON logo, 1945



Before the end of the year, the calls were changed to KBON, in December 1941.

The company changed its name from MSB Broadcasting to Inland Broadcasting the following February.

KBON's target date for signing on was set for May 1942. Inland later moved the sign on date up to March 1.

Studios and a tower were constructed at the Central Club building, 2027 Dodge. Another snag arose and the startup date was delayed when the Omaha City Council ordered the station's tower to be removed from the roof of the building.

The city claimed the 150-foot tower was constructed without a permit and was completed despite objections by the city building engineer, who, in his citation said towers are a hazard in crowded areas of the city.

The engineer's citation likely was tossed out as KBON's tower remained in place and the station signed on only a few days past its target date.

KBON signed on March 4, 1942. The public was invited to the inaugural broadcast on the first-floor auditorium of the Central Club at 20th and Dodge.

KBON called itself *Omaha's New Radio Voice* and promoted its affiliation with the Mutual Broadcasting System and Associated Press. Paul Fry came over from WAAW and the *Omaha World-Herald* to become general manager. By 1948 Fry will go on to be VP GM and a major stockholder in Inland Broadcasting.

KOIL 1290 Omaha ADDS A NIGHT TIME DIRECTIONAL ARRAY

KOIL boasted another Omaha broadcasting first during the 1940s. It would be Omaha's first station to install a directional antenna system.

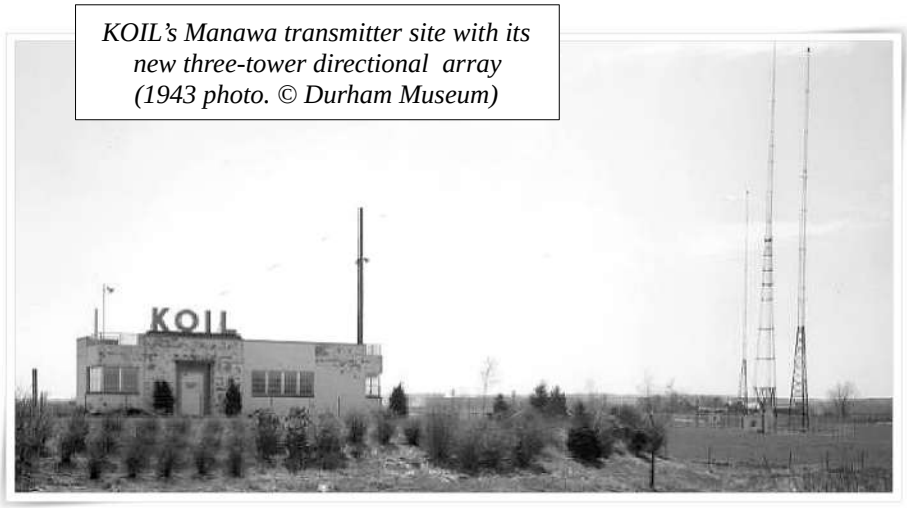
KOIL was running 5000 watts but had to cut back to 1000 watts at night. If a nighttime signal pattern could be devised that beamed power away from particular neighboring stations that would otherwise suffer interference, the 5000 watts would be permitted. The higher power would improve night coverage in the city, and as a side benefit would increase distant coverage in the direction of the beams.

KOIL sought permission to install its directional antenna for 5000 watts in 1939. Two stations then requested protection from nighttime interference from KOIL should it be granted a higher power authorization--WHIO in Dayton, Ohio, and KGVO, Missoula, Montana. A nighttime signal pattern with nulls in the direction of those two stations needed to be designed and approved by the FCC.

Consulting engineers came up with the design by 1940. It required two additional towers to accomplish the desired night pattern. They would be smaller at 210 feet and line up in a proper orientation on either side of the original tower.

The orientation and towers spacing was determined by complex formulas that take frequency and relative phasing and power of the signal feed to each tower into account.

The night pattern would beam primarily NNE and SSW, with the signal pulled in toward the directions of Montana and Ohio. The new towers cost about 15-thousand dollars and were up in early 1941, in time for the NARBA national frequency shift scheduled for March 29.

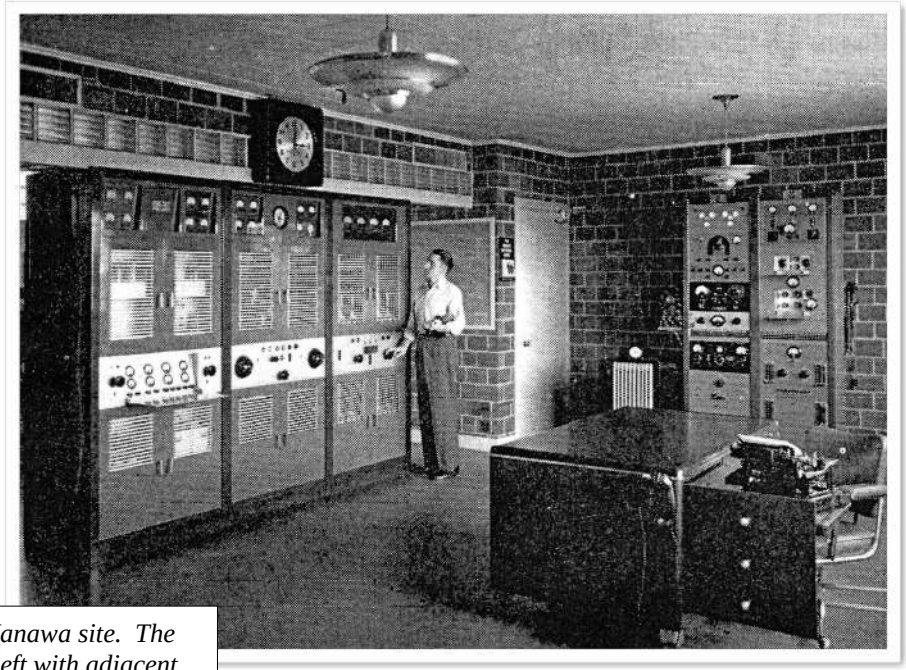


KOIL's Manawa transmitter site with its new three-tower directional array (1943 photo. © Durham Museum)

KOIL's three-tower array at the Lake Manawa site was authorized to go into operation at the same time as its new dial position of 1290 on March 29th. The new frequency, power and pattern debuted that evening, airing the network lineup that included *Duffy's Tavern, The Shadow,* and the ever-popular *Hit Parade.*

KOIL was now 5000 watts full time, no longer switching to a lower power each night, but instead switching over to its directional pattern using all three towers at sunset, and going back to the single center tower each sunrise. At the transmitter, the changeover each sunset and sunrise was a noisy affair with heavy relays taking the transmitter off the air for about a second or two while switching its output feed.

The twinkling red trio of tower lights at night for years was a familiar view in the distance from Omaha's Rosenblatt Stadium on game nights all through the 1950s and much of the 60s.



KOIL transmitter room, Lake Manawa site. The 5000-watt transmitter is on the left with adjacent phaser units. The racks on the right hold various equipment including signal monitoring.

1940 photo of the KOIL players drama group. Director Had Hughes is wearing the headphones on the right. The sound effects man is seen reaching over for one of his effects.

KOIL continued to produce local drama programs well into the 1940s. *Krime Klan* started in 1930 and lasted a good 15 years. Production continued from KOIL's Omaha studios after the move from the Council Bluffs Hilltop Studios.

Probably the biggest national feed involving KOIL happened in early 1940. It was an episode of CBS' vastly popular *Burns and Allen Show* which came to Omaha as part of the Union Pacific Golden Spike Days.

Happening by chance, the opportunity arose when comedienne Gracie Allen on an earlier show announced a run for President. The gag mushroomed into a whistle-stop campaign concluding in Omaha, where her party, the Surprise Party, would hold its convention.

Allen's campaign dovetailed nicely with Omaha's annual celebration of Golden Spike Days, a joint venture between the city of Omaha and the Union Pacific Railroad headquartered in Omaha. The railroad supplied the train for the whistle-stop tour from Hollywood with Gracie using the private car belonging to W. Averell Harriman, Union Pacific's chairman of the board.

The troupe's arrival was covered live by KOIL, but WOW didn't miss the chance to grab a share of coverage. WOW covered the rail trip from North Platte to Omaha and carried an hour of the arrival ceremony.

The *Burns & Allen* weekly radio show on May 15th was aired before a live audience at the AkSarBen coliseum.

Gracie Allen's arrival in Omaha in front of the WOW and KOIL microphones (1940)

Along with the two stars, all the show regulars appeared: bandleader Ray Noble, singer Frank Parker, announcer Truman Bradley, and performers Mary Kelly and Elliot Lewis. Omaha Mayor Dan Bernard Butler was a special guest.

There were two shows for airing over CBS, at 5:30 and 8:30 p.m., the latter being the feed for the West Coast. Both CBS shows were aired locally on KOIL with the station receiving credit for its assistance at the conclusion of each broadcast.

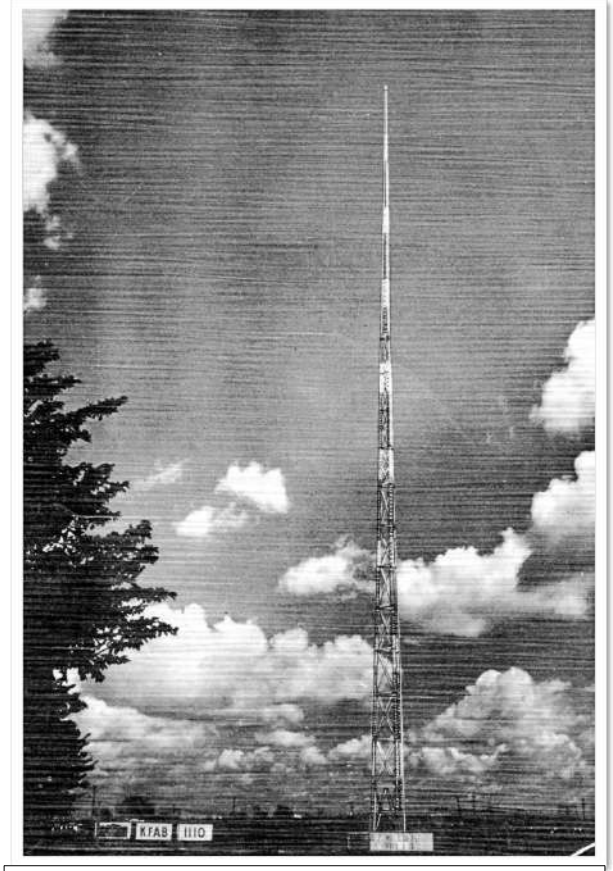
Burns and Allen's ratings were already high and there was no ratings spike seen for the programming stunt, but Gracie got some write-in votes in the November election. *Burns and Allen* bounced between NBC and CBS until 1950 when they went to television, succeeding in that medium for another eight years.

(AkSarBen, Nebraska spelled backward, at one time was the tenth most popular horse racing track in the country. Its AkSarBen Coliseum, built in 1929, was a popular venue for numerous uses ranging from an ice rink and rodeos to concerts. Frank Sinatra was one of the last big names to perform there. The coliseum was demolished in 2005.)

KOIL Logo, 1943

KFAB 780 Lincoln EXPANSION PLANS ARE PUT ON HOLD

As KFAB entered the 1940s, owner Central States Broadcasting was focused on making KFAB into a 50-thousand watt powerhouse, the maximum power permitted under federal law. Much of the pressure to do so came from CBS. The network loved the coverage and prestige of 50 thousand-watt affiliates and was happy to assist and even bankroll some of the efforts.



KFAB's tower, located near the fairgrounds in Lincoln (1944 photo)

Having increased power to 10-thousand watts just a few years earlier, KFAB 770 kHz was looking at 1080 kHz where it could increase power to 50-thousand watts and get away from the synchronized broadcasting with Chicago's WBBM on 770 kHz. The Chicago station had already increased power to 50-thousand watts in 1935.

CBS was the catalyst in the 1080 kHz plan. The network already owned 50-thousand watt WBT in Charlotte, North Carolina on that frequency. Except for two Chicago daytimers WCBD and WMBI sharing time on 1080, CBS believed a way could be cleared for both Omaha and Charlotte to operate with the high power on that channel.

However, Norfolk's WJAG on 1060 kHz, just two channels and 90 miles away from Lincoln, could be a problem. Being so close to each other on the dial, the stations risk interfering with each other in the Eastern Nebraska coverage areas.

The idea for KFAB's move to 1080 kHz had been in the works at least since the late 1930s. WJAG owner Gene Huse showed concern as early as 1937 about how KFAB would interfere with WJAG on such close frequencies.

Huse, in a letter to then-Congressman Karl Stefan (WJAG's first announcer who had been elected to high office in 1934) stated, "They must know they cannot shift to 1080 [at 50,000 watts] without our permission." (Gene Huse to Karl Stefan, Autograph Letter Signed, 25 May 1937, Karl Stefan papers, Nebraska State Historical Society, Lincoln, NE). In anticipation of the move, WJAG applied for KFAB's facilities on 770 (*Broadcasting* Nov 5, 1939).

WJAG's Gene Huse.

CBS would welcome KFAB to 1080 kHz by having its Charlotte station protect KFAB's nighttime coverage area while KFAB would do the same for WBT. This could be accomplished with the addition of towers for making the antenna systems into a directional arrays, both stations placing signal nulls toward each other. For CBS, it would be a win-win, with high power for its Omaha and Charlotte affiliates, and WBBM 770, CBS in Chicago, at last gaining a clear channel.

Short-term opposition to KFAB's move to 1080 came from the Chicago stations, WCBD licensed to Zion, Illinois and WMBI, owned by Chicago's Moody Bible Institute. A hearing was set in January 1939 (*Broadcasting* Jan 9, 1939). WJAG was not part of the opposition as it was already planning to move to KFAB's old channel of 770.

In 1940 it was announced that CBS was to lend 200-thousand dollars to KFAB. Joe Seacrest of KFAB Broadcasting Co. told the FCC the money was for proposed changes at KFAB Lincoln (*OWH* Dec 13, 1940). The plan was to be filled in with more specifics later at a scheduled FCC hearing that was to be attended by execs from KFAB, WBBM, and WJAG in Norfolk, however, that hearing was later canceled. It's presumed the loan was to assist KFAB's legal fees for the frequency move.

The plans remained intact during the 1941 NARBA frequency shifts taking effect on March 29. KFAB and WBBM shifted upward from 770 to the new dial position of 780 kHz. WJAG shifted upward from 1060 kHz to 1080 kHz, while WBT went to 1110 kHz, along with Chicago daytimer WMBI, no longer sharing time with WCBD. Also on 1110 was KPAS, a new 10-thousand watt full-timer in Pasadena, California.

A hearing was set in October 1941 for WBT 1110 Charlotte and KFAB 780 Lincoln to each get 50-thousand watts unlimited hours with nighttime directional antennas on 1110. It included modification of the WBBM Chicago license to obtain full clear channel operation on 780, and for WJAG to move to 780 kHz with one thousand watts, restricted to daytime operation only. CBS would pay for material and expenses in shifting WJAG to the lower frequency.

Plans were interrupted by the war. The FCC freeze on applications placed everything on hold. After two years of pending applications, the plan was dismissed without prejudice due to the war restrictions and freezes. KFAB's move would have to wait until after the war when licensing would resume, steel for towers would again be available, and equipment manufacturers could again turn to commercial production. KFAB 780 continued to synchronize night signals with WBBM 780 Chicago for another three years.

WOW 590 Omaha LITIGATION FORCES TRANSFER OF CONTROL

WOW 590 kHz was in court during the war years. It began in 1939 when a state legislative bill threatening Woodmen of the World's ownership of WOW radio was introduced.

State Senator Sam Klaver of Omaha made it no secret he was targeting Woodmen of the World with his measure to prohibit investment firms and insurance firms in the state from having interest in a radio station except in the furtherance of its own business (Jan 30, 1939).

Woodmen argued that the company's articles of incorporation were amended to permit broadcasting before the station was built. It was also pointed out that radio stations are already sufficiently controlled at the federal level with no need for state legislation (March 14, 1939).

Faced with losing its tax-exempt status, Woodmen began seeking a buyer. When none could be found, a new company was proposed to take over WOW operations leaving Woodmen to "devote their efforts to the society's affairs."

WOW General Manager John Gillin, Jr.

The proposal was a 15-year lease to Radio Station WOW Inc., paying Woodmen $8000 a month, dropping to $5600 a month after three years. The proposal statement showed the station's original cost at $167 thousand and the value at an astounding $51.6 million with real property at another $51 million.

WOW manager John Gillin Jr. would remain as president of the new company. The station was profitable and Gillin was the biggest shareholder according to the proposal statement. The transfer was subject to FCC approval (Oct 3, 1942).

Gillin was one of only two stockholders with radio connections at the time. He joined WOW in 1929 after a stint in advertising. He started as a part-time announcer while attending Creighton law school. Gillin became WOW general manager in 1935.

Omaha Mayor Butler urged the commission to hold a public hearing on the transfer saying the public is entitled to know all the facts.

Then came a challenge to the transfer in a lawsuit filed by society member Homer H. Johnson. He stated the society stands to lose more than three million dollars over the term of the lease.

Woodmen president De Emmett Bradshaw revealed the reason behind the decision to dispose of WOW was because they feared federal taxation and some directors felt it took his time away from the insurance business (deposition in Johnson lawsuit, Dec 10, 1942).

The FCC on December 17, 1942 voted 4 to 3 to approve the transfer, however the Johnson lawsuit continued with a trial set for March.

The judge denied Johnson's suit saying it failed to establish fraud or, in a new wrinkle, to show the new company had a conflicting interest in the sale of the Nebraska Power Company to Consumers Public Power District, the latter having a board member in the new WOW company. Johnson appealed to the Nebraska Supreme Court which heard oral arguments in November 1943.

The state Supreme Court split 4 to 3 in voiding the lease, ruling that terms were unfavorable to the society. WOW sought a rehearing but the court reaffirmed its decision in May 1944. The court delayed its ruling to August so that WOW could mount an appeal.

The U.S. Supreme Court agreed to review the ruling in December 1944. WOW's argument presented in March 1945 was whether the Nebraska Supreme Court invaded the jurisdiction of the FCC in ordering the cancellation of the lease.

The Nebraska decision was upheld. However, the court suspended the settlement of the station license in order to give Woodmen time to sell the station before having to take it back. WOW opened up for bidding, receiving seven proposals for lease or purchase by August 1945.

WOW Logo, 1942

A sale never took place. In September the Woodmen decided to lease the station to the same corporation as before but under a new proposal that was radically different from the original of 1942. It had much higher capitalization and successfully went into effect on Sept 1, 1945.

Litigation by Homer Johnson continued, now seeking the hundreds of thousands of dollars the lessee made during the years it held control of the transfer. Mr. Johnson won and was also awarded $150 thousand in attorney's fees out of the recovered money, marking the end to the case in July 1946.

Through it all, WOW continued to operate successfully, thanks to the station's local line up of personalities and newsmen and the popularity of NBC programs.

THE DAWNING OF FM

Frequency Modulation (FM) was a totally different technology being developed by Edwin Armstrong in the 1930s, his first patent coming in 1933. Armstrong was seeking static-free high fidelity broadcasting, and succeeded. Obstacles had to be overcome, such as the need for totally new receivers, patent lawsuits with RCA, and persuading the FCC to establish a new commercial band of channels for the stations.

Omaha was poised to embrace the new service. When the FCC allocated the frequencies and announced 1941 for the start of commercial service, WOW applied for a license in June 1940. Manager John Gillin Jr. announced the application for a "high-frequency FM channel" was for "possible introduction of the new static-less transmission system."

Anticipation was high among retailers as well. FM receiver advertisements praising the benefits of FM were appearing in the *Omaha World-Herald* in 1941 without any nearby FM station yet on the air. Schmoller and Mueller Pianos featured a Stromberg-Carlson AM-FM-Phonograph unit for 395 dollars, while a neighboring ad offered receivers with a plugin for FM and TV (*OWH* Oct 30, 1941).

Omaha would not get an FM station in time. As the war intervened, eighteen FM stations were on the air in the country, Omaha's nearest being in Chicago. 120 stations including Omaha's WOW were left waiting for FM licenses when the process was halted. By the time licensing would resume following the war, the landscape will be vastly different.

Interestingly, FM technology did indeed become active in Omaha before the war, though not in the broadcasting service. It was for the radio communication system built in 1940 for the Douglas County Sheriff's office. The agency constructed a new 150-foot tower at Clearview Home on West Maple Road becoming the first FM law enforcement communication system in the country. Clearview, a 1931 home for the aged, was on one of the highest points in Douglas County, about ten miles west of Benson. (*OWH* Aug 27, 1940).

OMAHA RADIO AND THE WAR

WOW's Lyle DeMoss (1942 photo)

Omaha's big signals in 1940 were WOW and KOIL, and from Lincoln, KFAB. WOW 590 carried NBC Red while both KOIL 1290 and KFAB 780 carried CBS. In *World-Herald* program listings, KFAB programs were listed only when they weren't CBS programs simultaneously airing on KOIL.

Local vocalists, a mainstay for radio since its dawning days, were still very much around in the 1940s. Many stations had announcers who doubled as vocalists, a programming element that for WOW developed into a quartet in 1943.

Lyle DeMoss came to WOW in 1938 from KFAB in Lincoln. DeMoss got his start as a vocalist beginning in 1923 at 9DXH in Anthony, Kansas. He later was associated with KMMJ at Clay Center at a time when the famous Bill Hay was an announcer there. DeMoss became WOW's program manager in 1942.

With DeMoss, WOW 590 formed its own quartet of announcers who could sing barbershop, even winning first place in an *Omaha World-Herald* contest in 1943. "The Announcers" quartet were DeMoss, Ray Olson, Tom Chase, and Thomson Holtz. Promotion manager Bill Wiseman also participated in the quartet at times.

The WOW Announcers Quartet:

Thompson Holtz,
Tom Chase,
Lyle DeMoss
Ray Olson

(1946 photo).

The four had hardly harmonized together before winning the 1943 contest where they beat out 15 competitors. After that, the quartet of announcers sang at numerous competitions, remotes, and events.

Network programming continued with entertainment shows by the radio stars of the day, sponsors renewing programs during the war with a "the show must go on" fervor. The biggest stars on NBC Red carried by WOW in Omaha included Red Skelton, Jack Benny, Bob Hope, and on Sunday nights, Walter Winchell.

Network music programs were *Fred Waring's Pleasure Time, the Voice of Firestone* concerts, *Kraft Music Hall with Bing Crosby, Rudy Vallee,* and *the Kay Kyser Show*.

Entertainment ranged from comedy such as *Fibber McGee & Molly, the Aldrich Family*, to drama, *Mr. District Attorney, The Thin Man*, along with game shows, *Truth or Consequences*, and nighttime soaps, *One Man's Family*.

However, the biggest growth in programming was in news reporting, becoming serious business in the late 1930s as the war approached. No longer focusing on gossip and commentary, newscasters were forced to learn objectivity.

By the end of the 1930s as war loomed in Europe, listeners sought fast and accurate news, with radios replacing the corner newspaper boys.

WOW 590 was the beneficiary of NBC's efforts during the lead up to the world war. NBC's advantages were numerous. Most obvious was Max Jordan who spent four years negotiating to transmit his reports direct from European cities allowing him to get information out well ahead of CBS. Additionally, NBC's parent company, RCA, had a network of trans-oceanic shortwave circuits for getting reports stateside, a technical advantage over CBS. Then there was the name, giving the network favored attention. National Broadcasting Company was perceived in Europe as being the government broadcasting arm for the U.S.

Max Jordan scored scoops for NBC. He was the first to report directly from Vienna the news of Germany's annexation of Austria in March 1938. CBS' William Shirer was left to report the event from London, the following day.

This resulted in an enraged Bill Paley at CBS ordering the immediate creation of *World News Roundup,* a series of reports from European capitals each night. The show debuted with about eight hours notice and continued as the longest-running network radio newscast in history.

But Max Jordan went on with an even bigger coup, obtaining the text of the September 29th Munich Agreement between Britain's Chamberlin and Germany's Hitler that ceded Czechoslovakia to Germany. His skill in obtaining and reporting the text direct from Germany left CBS' William Shirer and H. V. Kaltenborn in the dust by at least 45 minutes.

(Jordan's NBC reporting career was impressive even before this point. He reported in 1933 on the last German election until after the war, and in 1936 was the exclusive reporter aboard Germany's maiden flight of the *Hindenburg*.)

CBS and Murrow's Boys would overtake NBC's lead by the war's end, although Jordan scored one last scoop as the first to report Japan's offer of unconditional surrender before it was completely received by the White House.

Hitler's barking, staccato-speech voice punctuated with cheers and "Heil Hitler" was heard in Omaha and the rest of the country via the networks. Broadcast over WOW the afternoon of September 12, 1938, a crowd gathered around loudspeakers outside the studios at 17th and Farnam Streets to hear the Chief Nazi confirm that his empire was ready to "liberate" Germans in Czechoslovakia.

Neville Chamberlain promoted peace over the air in his December 13, 1938 speech carried on KFAB. Hitler's January 1939 speech bringing up "the Jewish problem" was carried on WOW from NBC with interpretation at the WJZ New York studios. Hitler also threatened a radio war with "certain countries," meaning Britain and France, unless they stopped shortwave broadcasts in German.

Upon Germany's invasion of Poland, KOIL breathlessly promoted War News "as it occurs" with five regular daily local newscasts plus those of CBS' Kaltenborn, Elmer Davis, Ed Murrow, "and other Columbia Commentators." (*OWH* Sept 1, 1939)

President Roosevelt's *Fireside Chat* turned attention from the Depression to the coming war. He spoke to the nation on the European situation to "allay anxiety and relieve suspense" on the evening of September 3, 1939. KFAB and WOW were early in promoting coverage of the president's speech (*OWH* Sept 3, 1939).

Hitler again was heard in Omaha during his address to the Reichstag early on the morning of Friday, October 3, 1939. WOW and KOIL signed on as early as 5 a.m. to cover and summarize the event (*OWH* Oct 5, 1939).

Shortwave radio was the new technology in getting reports to America. Interest in the high-frequency bands increased as they became crowded with propaganda broadcasts between the European

powers. Even the *Omaha World Herald*'s program listings in 1939 frequently included short wave listings from several international broadcasters.

Nonetheless, American's interest in hearing news directly from international broadcast stations with shortwave's often unsteady audio, spotty day to day reception, and occasional but temporary fades was little more than a novelty, the networks providing all the information one needed.

With radio parts scarce, KFAB found itself assisting in the war effort by giving up unused parts that were on hand. At the start of the war the government was hastily taking over private shortwave facilities to join the international battle of words. In building up an outlet in Cincinnati that was taken over from Crosley Broadcasting, a need for a power supply and modulator brought the government to Lincoln when the parts were found at KFAB. The parts went into a composite transmitter licensed as WLWK that became one of the *Voice of America*'s network of shortwave transmitters.

Radio news reached maturity during the war. Its immediacy and the ambient sounds of war in the background created a demand that once belonged to newspapers. KFAB announcer Russ Leger recalls newscasts always led off with the war news (*OWH* Dec 20, 2000). Reporting objectively became an issue, a struggle for reporters who were so close to the issues.

War news commentary came from NBC's Clifton Utley (later known as Garrick Utley) and Raymond Clapper on MBS. CBS later had the better news department, built up as a response to NBC's superior entertainment line up. Edward R. Murrow's reports from London's rooftops during the Blitz brought the sounds of war to Omaha over KOIL and KFAB.

Soon, America was drawn into the war. On December 7th the Associated Press was first with a bulletin reporting the Pearl Harbor attacks. It crossed the wires that Sunday afternoon at 1:22 p.m., about an hour after the first bombs fell. Omaha listeners learned of Pearl Harbor via the networks just minutes after the AP report was confirmed. The radio bulletins came over at 1:26 p.m. on NBC and at 1:30 p.m. on CBS.

Local newsrooms were minimally staffed on generally tranquil Sundays and radio's response was sluggish. WOW reporter James McGaffin was the only person in WOW's newsroom when the news broke. WOW was carrying Sammy Kaye's *Sunday Serenade* on NBC Red, the show just concluding. The bulletin, read by NBC news writer Robert Eisenbach, lasted into the following show, *Chicago Roundtable*, causing it to be joined late.

WOW's James McGaffin.

From Lincoln, KFAB was carrying *The Spirit of '41*, a CBS series ironically promoting national defense. CBS aired its first bulletin at the conclusion of the show going into that network's only regularly scheduled newscast for the day where John Charles Daly announced the attack on Pearl Harbor. KFAB was not scheduled to carry the newscast but presumably stayed with the network.

Omaha's CBS outlet was KOIL, carrying local transcription programming at the time, as was NBC Blue affiliate KOWH. The 15-minute *Omaha World-Herald* news program at 1 p.m. on KOWH ironically had just ended seven minutes before the first Associated Press bulletin hit the newsroom at 1:22 p.m.

It's presumed KOIL and KOWH carried the Pearl Harbor bulletins in some form, though radio at the time was much less disposed to tossing sponsor's programs aside in order to cover breaking news. Even the national networks resumed regular programming that afternoon but continued with frequent bulletins.

President Roosevelt's "Day of Infamy" speech to Congress the next day was carried by all networks, attracting the largest radio audience in history to date. Nationally 81 percent of American homes were tuned in to the speech.

The networks brought the war into homes, but 80 percent of radio news still came from local stations. Omaha had its share of skilled, local newsmen since the beginning of the 1940s.

On KFAB 780 there was Gaylord Avery. Though Avery moved from WOW 590 to KMOX St. Louis in 1940, his stint there was short, and when returning to Omaha, he joined KFAB.

Avery's replacement at WOW 590 was Ray Clark from WNAX Yankton who became Chief Newscaster and Director of Special Events.

WOW also had James McGaffin, only part-time when he witnessed the Pearl Harbor bulletin on the news wire. McGaffin joined the Army six months later serving as a news writer for military stations broadcasting to American troops in North Africa. He returned to WOW in 1946 and was promoted to news director for both WOW AM and TV by 1950, serving 44 years at the stations before retirement.

Foster May gained fame for his seemingly incessant news coverage and his noontime show airing on WOW 590 from 16th and Farnam downtown where he interviewed passersby on topics of the day. May left WOW in 1942 for an unsuccessful run for the US Senate. Afterward, he went to Europe as a war correspondent then returned and worked free-lance .

During the war, May used his interview skills in Europe. He would find and interview Omaha soldiers in Europe for airing back home on WOW, sending back 176 interviews. WOW reporter Ray Clark did the same on the Pacific front with over 300 interviews.

Besides wartime newscasts, radio stations ran announcements and promotions for War Bonds, blood drives, scrap metal drives, and rationing, along with other promotions in support of the war.

KOWH and the *Omaha World-Herald* ran a "Smokes For Servicemen" Campaign fund in June 1943, collecting 220 dollars which translates to 4450 packs of cigarettes for servicemen abroad (Douglas County Historical Society).

Omaha stations began producing patriotic radio shows in early 1942. *Partners in Democracy* was presented by the Omaha civilian defense council, the first such large scale programming effort by any defense council in the U.S. Technical direction was led by Ken Stewart of KOWH, Had Hughes of KOIL, and Lyle DeMoss from WOW. The hour-long show aired on all three stations Sunday afternoons at 2 p.m.

Off the air, WOW formed a music-driven touring stage show in February 1942 that performed regionally in towns and cities raising money for war bonds. The *WOW Red White and Blue Patriotic Revue* was promoted as a two-hour extravaganza and would play in Nebraska and Iowa towns seeing turnouts of no fewer than 2000 at each venue (Feb 1942 WOW Tower).

The WOW stage show was produced and directed by Lyle DeMoss with most production costs picked up by Woodmen of the World. WOW's Studio Orchestra, Ray Olson, and Foster May were among the cast.

Transportation for the troupe was provided by Union Pacific Stages, a bus service the railroad operated along with its passenger rail service at the time. (UP sold its interests in the bus line in 1952.)

Starting in 1943 KOIL aired *Victory Bulletin Board* at 12:15 and *Victory Matinee*, the latter a 30-minute weekday show at 3:15 p.m. It featured the KOIL Studio Orchestra which was actually the Paul Moorhead Orchestra based at the Paxton Hotel. The show also featured comedienne Pat Bauman and was emceed by KOIL's Henry Peck (*Broadcasting* Oct 1944).

KOIL Studio Orchestra, also widely known as the Paul Moorhead Orchestra.

KOIL promotional photo for "Victory Matinee," 1944, with Pat Bauman and KOIL's Henry Peck at the microphone.

The biggest show came late in the war: WOW's *Your America*. The show was picked up by NBC and aired nationally beginning a 90-week run in 1944. Omaha's stable of radio talent resulted in this being the biggest national network program to originate in Omaha during the war.

The brainchild of the show was Union Pacific's President W. M Jeffers. His idea at the beginning was for a regional promotional lead-in for the railroad's 75th anniversary in 1944. It grew from there. *Your America* turned into a coast-to-coast NBC series.

As WOW so enthusiastically promoted it, "For the first time in Omaha's radio history, a Class A network show, comparable in quality to such headliners as *The Voice of Firestone*, or *The Cities Service Concert*, will originate in Omaha."

Your America used talent mostly from Omaha and vicinity. Much of the 58-member orchestra and chorus was made up of numerous Union Pacific employees. For announcers the railroad chose from the local roster of talent: Thompson Hotz and Ray Olson from WOW, Virgil Sharpe from KOIL, and as producer, Lyle DeMoss from WOW who also served as emcee. Famed composer/conductor Josef Koestner led the orchestra and vocal ensemble on the show.

The 30-minute Saturday series debuted January 8, 1944, going out live to 45 NBC affiliates at 4 p.m. from the sixth-floor auditorium of the Masonic Temple.

Among the audience of 500 attending the debut broadcast were five NBC executives from Chicago. The show audio pickup was mixed on an eight-channel Gates console. (The Masonic Temple, built in 1914 at 19th and Douglas Streets, adjacent to Fontenelle Hotel was demolished in 1998).

Live production of "Your America" national network show, 1944. Though moved from NBC to MBS and airing on KBON at the time of this photo, production was still handled by the WOW staff.

Your America moved to the Mutual Broadcasting System on October 15, 1944 when NBC no longer had an afternoon slot available. After switching over to KBON 1490, WOW program director Lyle DeMoss continued to direct the entire production along with WOW's talent and technicians. WOW promoted the move to Mutual but omitted mentioning KBON's call letters after the initial announcement. On Mutual the show went out to 123 stations.

As D-Day approached, stations were heavily promoting their newscasts. WOW advertised "All the News First" from Associated Press, United Press, and the Chicago Daily News Foreign Service. The newsroom would be fully manned. "For the full story of the Invasion, stay tuned to KOWH," advertised the *World-Herald* station, promoting 13 newscasts daily. Additionally, KOWH advertised Gil Martyn News "presented in a terse, dramatic style that has won him renown as a newsreel commentator." This was a direct turnaround to KOWH's original 1939 pledge to de-sensationalize the news.

D-Day coverage was extensive, even though it began in the dead of night Omaha time. Unlike the caught-off-guard Pearl Harbor coverage when the war began, newsrooms were staffed and network commercial programs were canceled.

The first bulletin came over the wires at 11:30 p.m. Omaha time.

The report was from Germany's news service in Berlin, but could not be confirmed by an Allied source. The Germans had been known for sending out false bulletins as fishing expeditions, watching for the Allies' reaction and any intelligence that may slip out.

WOW Newsroom during D-Day coverage, June 4, 1944.

On CBS, Robert Trout walked from teletype to teletype, microphone in hand trailing a long cord, ad-libbing while scanning all the news services for developments.

It was another three hours before the Allied Command in Britain finally issued a communique saying Operation Overlord had begun. NBC was anchored by Robert St. John, who upon confirmation switched to London for the first reaction from the Continent.

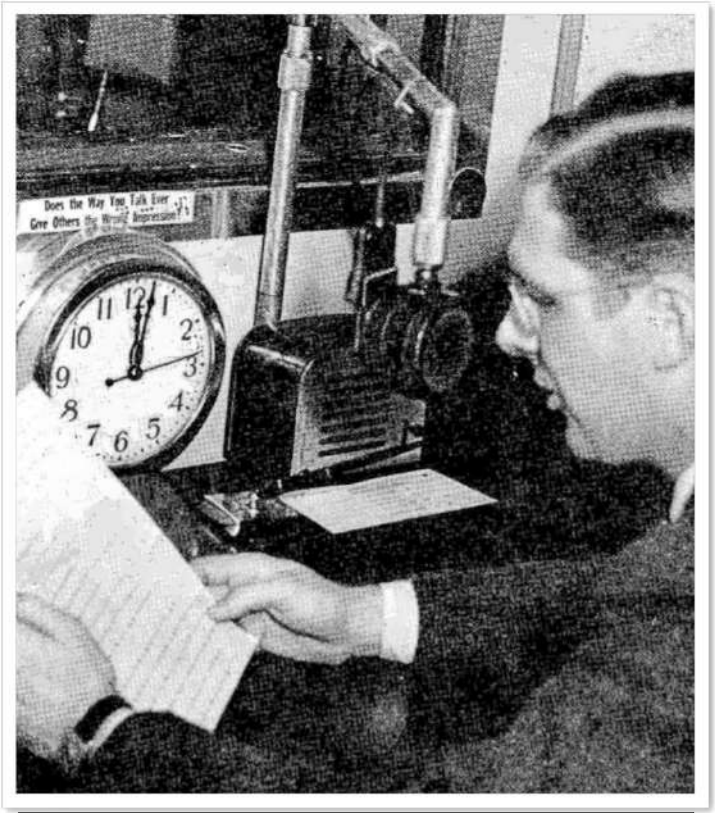
Omahans and the rest of the country woke up to the news, more than doubling radio listenership. *Time* Magazine called the coverage "radio's greatest day."

During the first 24 hours, WOW broadcast nearly continuous news and commentary on the invasion from its fully-staffed newsroom and from NBC. More than 85 percent of WOW's local commercial schedule was cut.

As the Allies battled to Berlin, President Roosevelt's last *Fireside Chat* came shortly after D-Day, on June 12. Roosevelt's death ten months later to the day was announced over all major radio networks breaking into regular programming with the bulletin.

On KFAB it was John Charles Daley with the bulletin, Daley well-known for his CBS coverage of the Roosevelt White House and as the net announcer for many of the President's speeches. News reports continued, mixed with solemn music and reaction interviews.

Omaha's broadcast transmitters dutifully aired network coverage of the war's continuing challenges and victories. Listenership was reaching a peak as news, commentaries, and analysis over NBC, CBS, and Mutual were making the nightly top ten in Hooper ratings. NBC's H. V. Kaltenborn who left CBS in 1940, and Lowell Thomas topped the ratings, followed closely by Bill Henry's *Johns-Mansville News* on CBS.



Ray Clark delivering the WOW noon newscast, the "Four-Bell News Roundup," 1944

Mutual's Gabriell Heatter closely followed, his nightly newscast becoming the first Mutual program to finish a season with a double-digit rating and the first MBS entry to ever break into a season's Top 50 list.

A false report of victory in Europe came on the evening of April 28th, 1945 when AP reported that Germany was done. Networks cautiously went with the bulletin waiting for confirmation, but a denial from President Truman came later that evening.

The networks remained vigilant for days, finally getting the long-awaited Associated Press bulletin on the morning of May 7th when Eisenhower's Allied Headquarters in France reported Germany's surrender. Regular programming and commercials were tossed aside and European correspondents took over via shortwave while newsrooms waited for confirmation from the White House.

The wait for confirmation dragged on. Confusion grew and stations resumed regular programming. It was nearly 24 hours before President Truman delivered a five-minute address at 9 a.m. May 8th announcing the end of the war in Europe. The delay, it was later revealed, was due to an agreement that Russia would sign its own document accepting Germany's surrender on May 8, which thereafter became the official date for VE Day. Though by this time the dramatic climax was gone, Truman's broadcast achieved a 64 Hooper rating.

As the war in the Pacific continued, Ray Clark as WOW's Pacific War Correspondent is credited with making the first direct broadcast to American radio listeners on NBC during an actual bomb run over the Japanese mainland on July 28, 1945. He was aboard the B-29, *City of Omaha*.

Clark's broadcast was carried live by several networks and recorded for later broadcast by others. That same plane brought Clark back home to Omaha in October for a huge welcome. (Clark went on to become the first news anchor for WOW TV 6 when television arrived in Omaha in 1949.)

WOW's Ray Clark, later the first anchor for the WOW TV channel 6 10 p.m. news.

Victory in the Pacific was hastened by America's use of its newly-developed nuclear capability. Japan offered a conditional surrender via shortwave at 6:36 a.m. Omaha time on August 10, 1945. CBS was the first to report the news six minutes later.

The actual surrender, this one unconditional, came August 14th and was scooped by NBC's Max Jordan. Just three minutes into the soaper *Stella Dallas* being carried on WOW 590, Jordan at 3:18 p.m. reported that the Japanese surrender terms were received in Berne, his report airing well before the White House received the complete message or signaled acceptance. Nonetheless, celebrations erupted at the radio's report.

CLOSE UPS and TECHNICAL

DIRECTIONAL ANTENNA SYSTEMS

Theoretically, all stations radio signals emanate from their antennas equally in all directions. There are generally minute incidental and unplanned variations in these non-directional patterns created by chance characteristics of the antenna and nearby structures.

The ability to manipulate a signal's pattern to radiate only in desired directions would be an advantage in many situations. Engineering advances soon found a way to design directional antenna systems where stations could send a signal in desired directions while nulling the signal in other directions. The nulls were of particular interest as they would vastly decrease interference to stations in the direction of the suppression.

Toward the late 1930s, AM directional arrays were appearing, allowing new stations to squeeze in and existing stations to increase power without upsetting neighboring stations. There were about 39 such arrays in operation at the beginning of the war. There would likely have been more, but the consulting engineers who could work the complex engineering formulas were expensive, not to mention the cost for extra towers and associated real estate required, plus a phasing unit that must be placed between the transmitter and transmission lines to the towers. Once operational, on-going proofing, monitoring and adjusting of antenna patterns also can be costly.

The move to directional arrays began with the switch from the old-style horizontally oriented "flattop" and "cage" transmitting antennas to vertical antennas. These vertical antennas were towers rising from an insulated base to a height determined by the station's wavelength for maximum efficiency, the entire length being used as the radiator.

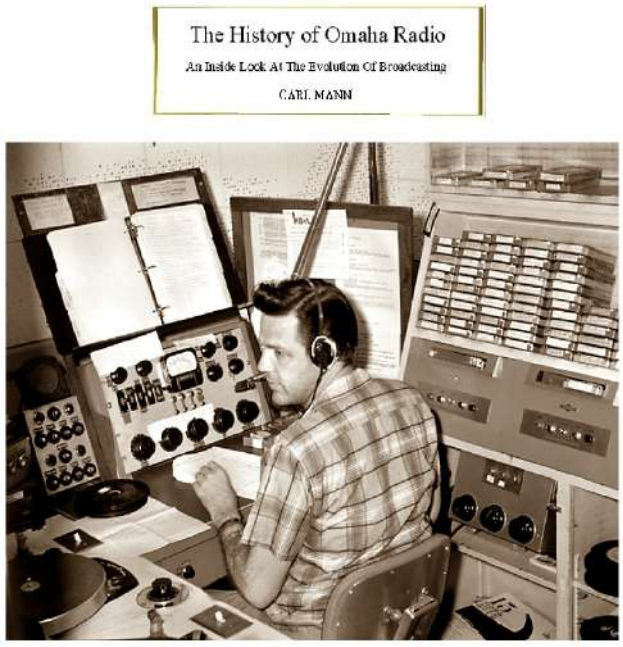
The phasing unit is required to feed each tower with just the right power in the right phase relative to the others in order to achieve the desired signal pattern. Tower positioning and spacing is also a critical factor, as are their compass alignments in relation to the desired directions of power and nulls. Engineering so many variables with a slide rule was a marvel in its day.

After the war, broadcasting's directional abilities heavily contributed to the constant increase in station numbers, even more so decades later when computers took over slide rules. By 1950 the number of AM stations had tripled, and doubled again by 1970.

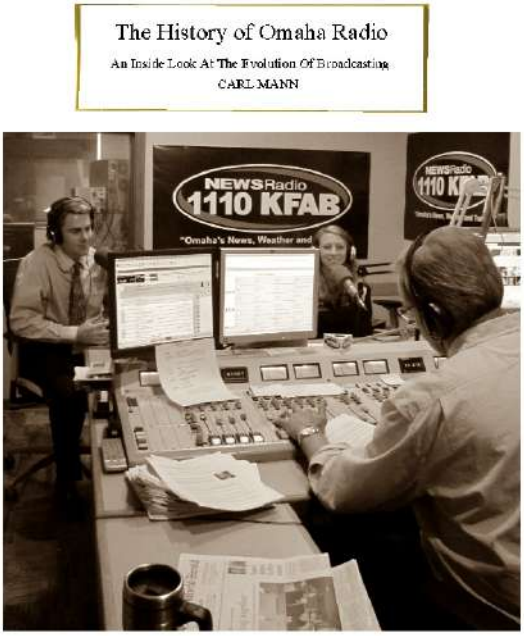
POST-WAR-- A NEW LANDSCAPE

With the war's end, pent-up consumerism took over and the Boom Years followed. But unlike the Golden Age during the Depression when radio was the nation's darling, the medium now faced challenges that threatened its future. The networks peaked and would begin a decline, television would take over the prime time audience, and FM would struggle unsuccessfully to gain a foothold.

What developed during the remainder of the 1940s was the setting of the stage for locally-produced music format programming. Omaha's contributions to the nation's evolution to Music and News Radio was major and is detailed in Volume Two. (All volumes are available at OmahaRadioHistory.com.)



Volume Two 1945 - 1979
The Music and News Era



Volume Three – 1980 to 2000
The Run-Up to Corporate Radio

ABBREVIATIONS GUIDE

ABC	American Broadcasting Company (network)
AP	Associated Press news service
ASCAP	American Society of Composers Authors and Publishers (Collects performance royalties)
CBS	Columbia Broadcasting System (network)
DX	Distance (amateur operator lingo) To DX is to listen for distant stations.
FCC	Federal Communications Commission (Government regulatory agency)
FRC	Federal Radio Commission (Government regulatory agency before the FCC)
GM	General Manager
kHz	KiloHertz (the measurement of frequency in kilocycles, one thousand cycles. Used for denoting AM stations dial positions.)
LJS	Lincoln Journal Star, newspaper daily
MBS	Mutual Broadcasting System (network)
MHz	MegaHertz (the measurement of frequency in cycles; one million cycles. Used for denoting short wave and FM dial positions.)
NBC	National Broadcasting Company (network)
NCE	Non-Commercial Educational station
Non-Comm	Non-commercial station, primarily for educational or religious purposes.
NARBA	North American Regional Broadcasters Agreement 1941 (A series of international treaties defining technical standards and frequency assignment distribution)
OWH	Omaha World-Herald, newspaper daily
PD	Program Director
QSL	Verification card or letter from a station confirming reception. Became a hobby of collectibles for some listeners enjoying distant reception.
RADEX	Radio Index (Monthly Publication of station listings, profiles, 1925-1942)
RSB	Radio Service Bulletin (Commerce Dept. monthly publication 1915-1932)

ABOUT THE AUTHOR

Carl Mann spent the majority of his working career in radio broadcasting He began in technical work obtaining his FCC First-Class Radiophone License before entering announcing and Top 40 air personality work. His air work included stints at KATI Casper, KOOK Billings, KOMA Oklahoma City, KOIL Omaha, and KCRG and KQCR FM Cedar Rapids. His credits include Music Director and Operations Manager at KOIL and Program Director at KCRG and KQCR. Carl also worked in radio and television news at WOW Radio and at KPTM Fox 42 television, both in Omaha. Carl now resides in Cedar Rapids, Iowa with his wife Sharie, dog Andy, and three cats. He may be reached at OmahaRadioHistory.com or at catmann03@yahoo.com.

The author in 1975 at KOIL, Omaha (photo courtesy Larry R. Jansky).