

CONTINUITY FROM

W L W

“THE NATION’S STATION”

Report on

50 - 500 Kw. Power Shift Tests

The Crosley Radio Corporation

January 4, 1938

The Crosley Radio Corporation

CINCINNATI, OHIO

UNITED STATES
NAVAL MAP

UNITED STATES
NAVY
NAVY MAP

W1W 500 KW OPERATION

DAY - BY VERTICAL ANTENNA

NIGHT - DIRECTIONAL ANTENNA



GULF OF MEXICO

Scale
1:50,000

- (All Programs Listed in Eastern Standard Time)
- 6:30 A. M. **Top O' The Morning**, McCormick Fiddlers.
 - 6:45 A. M. **Top O' The Morning**, McCormick Fiddlers. (Foley and Company)
 - 7:00 A. M. **Nation's Family Prayer Period**. Rev. E. Howard Cadle. (Mutual)
 - 7:15 A. M. **Morning Devotions**. John Hudock, Director.
 - 7:30 A. M. **Swing Time**.
 - 7:45 A. M. **News Flashes**.
 - 8:00 A. M. **Chandler Chats**, Arthur Chandler, Jr., Organist.
 - 8:15 A. M. **Pinex Post Office**. Ludy West and Orchestra. (Pinex)
 - 8:30 A. M. **Cheerio**, Inspirational Talk and Music. (NBC)
 - 9:00 A. M. **Hymns of All Churches**. Joe Emerson and Choir. (General Mills)
 - 9:15 A. M. **Art Gillham**. Whispering Pianist.
 - 9:30 A. M. **Aunt Mary**, Child Psychology.
 - 9:45 A. M. **Larry and Sue**.
 - 10:00 A. M. **Stumpus Club**. Charles Dameron. (Etro Aspirin) (General Pharmacal Co.)
 - 10:15 A. M. **Bachelor's Children**, Drama. (Cudahy Packing Co.) (Mutual)
 - 10:30 A. M. **Keith Wildeson's Wildcats Orchestra**.
 - 10:45 A. M. **Arthur Chandler, Jr.**, with James Alderman, Commentator. (Procter & Gamble)
 - 11:00 A. M. **Live Stock Reports**.
 - 11:10 A. M. **River and Weather Reports**.
 - 11:15 A. M. **Personal Column of the Air**. (NBC) (Procter & Gamble, Chipso)
 - 11:30 A. M. **Love Song**. (General Mills) (Mutual)
 - 11:45 A. M. **The Gospel Singer**. Edward MacHugh. (Procter & Gamble, Ivory Soap) (NBC)
 - 12:00 NOON **Girl Alone**. Dramatic sketch (Kellogg Co.) (NBC)
 - 12:15 P. M. **Rubinoff and His Violin**. (Chevrolet)
 - 12:30 P. M. **Live Stock Reports**.
 - 12:35 P. M. **National Farm and Home Hour**. (NBC)
 - 1:30 P. M. **Gus Arnheim's Orchestra**.
 - 1:45 P. M. **Molly of the Movies**. Drama. (The Wander Co., Ovaltine) (Mutual)
 - *2:00 P. M. **To Be Announced**.
 - 3:00 P. M. **Pepper Young's Family**. (Procter & Gamble, Camay) (NBC)
 - 3:15 P. M. **Oxydol's Own Ma Perkins**, Dramatic Sketch. (NBC) (Procter & Gamble, Oxydol)
 - 3:30 P. M. **Vic and Sade**. Comedy Sketch. (NBC) (Procter & Gamble, Crisco)
 - 3:45 P. M. **The O'Neills**, Drama. (NBC) (Ivory, Procter & Gamble)
 - 4:00 P. M. **Paul Sullivan**. News Commentator. (Pure Oil Co.)
 - 4:05 P. M. **Virginians**. Male Quartet.
 - 4:15 P. M. **Life of Mary Sothern**, Drama, starring Minabelle Abbot. (Lehn & Fink) (To Mutual)
 - 4:30 P. M. **Betty and Bob**. Drama. (General Mills, Bisquick)
 - 4:45 P. M. **Kitty Keene, Inc.** (Dreft)
 - 5:00 P. M. **News and Financial Notes**.
 - *5:05 P. M. **Toy Band**. Cousin Charles Dameron, and Uncle Joe Lugar's Toy Band.
 - 5:15 P. M. **Jack Armstrong**, The All-American Boy. (General Mills)
 - 5:30 P. M. **The Singing Lady**. (Kellogg Co.) (NBC)
 - 5:45 P. M. **Little Orphan Annie**. Childhood Playlet. (NBC) (Wander Co., Ovaltine)
 - 6:00 P. M. **The Johnson Family**. Jimmy Scribner's One-Man Show. (Lavelle, Inc.)
 - 6:15 P. M. **Ralph Nyland**, Tenor, with Orchestra.
 - 6:30 P. M. **Bob Newhall**, Sports Commentator.
 - 6:45 P. M. **Lowell Thomas**, News Commentator. (Sun Oil Co.) (NBC)
 - 7:00 P. M. **Amos N' Andy**. (Pepsodent) (NBC)
 - 7:15 P. M. **Vocal Varieties**. Smoothies.. de Vore Sisters and Male Octet. (Tums) (A. H. Lewis Medicine Co.)
 - 7:30 P. M. **Lum and Abner**. Comedy. (Horlicks Malted Milk) (NBC)
 - 7:45 P. M. **Pleasant Valley Frolics**. Uncle Dan Carson and His Musical Kinsfolk. (Crown Overall Co.) (To Mutual)
 - 8:00 P. M. **Rudy Vallee and His Connecticut Yankees**. Guest Artists. (Standard Brands, Inc., Royal Gelatin) (NBC)
 - 9:00 P. M. **Maxwell House Showboat**, with Lanny Ross. (NBC) (General Foods Corp.) (Maxwell House Coffee)
 - 10:00 P. M. **Bing Crosby**. Bob Burns, Jimmy Dorsey's Orchestra; Guest Artists. (Kraft Phenix Cheese Corp.) (NBC)
 - 11:00 P. M. **Paul Sullivan**, News Commentator.
 - *11:15 P. M. **The Queen's Minstrel**. Riccardo Rondelli, Tenor. (General Pharmacal Co., Pep-Ti-Kao)
 - *11:30 P. M. **Hotel Gibson's Orchestra**.
 - 12:00 MIDNIGHT **Moon River**. Sydney Mason, Reader; de Vore Sisters and Organ.
 - 12:30 A. M. **Jan Garber's Orchestra**. (NBC)
 - 1:00 A. M. **Al Kavelin's Orchestra**. (Mutual)
 - 1:30 P. M. **Clyde Trask's Orchestra**.
 - 2:00 A. M. **Sign Off**.

(* New Listing)

CONTINUITY FROM

WLW

“THE NATION’S STATION”

BY: JOHN PRICE

You can tell when a man owns a powerful radio station. There is a bit of a swagger at the NAB convention, which means either a 1-A clear channel or four years at West Point. There's a tendency to drop little gems: "son, I spill more watts that that on the floor just warmin' her up." And the habit of referring to lesser licenses as "coffeepots."

What follows is a fond recollection for the power trippers of kilocycle avenue – a look back at a station located at the bend of the river where Kentucky, Ohio and Indiana meet. It was called "The Nation's Station," a true statement in an industry prone to superlatives.

It boomed out with enough watts (500,000) to literally dim the street lights. In an age free from layers of man-made hash, it got requests from the royal family of Britain, not to mention loyal families from Portland to Portland.

It was a one-station network with a rate card like the NBC Red, a cast of thousands, a Who's Who alumni club, a 750 acre farm and a heart as big as the buzzing, arcing giant out at the Mason, Ohio transmitter site.

To a staff musician, WLW may have meant "World's Lowest Wages," but to the propagation power trippers it will always mean "Whatta Lotta Watts!"

Actually, Powel Crosley, Jr., never intended

to be a broadcaster. Son Powel, III, in the very early twenties pestered Dad for one of those wireless outfits. When they went shopping for what the elder Crosley considered a toy, they found only rich men's playthings.

Instead of spending \$100 for a wireless, they bought "The ABC's of Radio" for 25¢.

The next step involved parts for a crystal set. Then came a \$200 receiver, and soon a 20-watt transmitter.

And Powel Crosley playing such records as "Song of India," thrusting his head down an eight-foot morning-glory born to ask for listener report, then playing the record again.

His American Automobile Accessories Company continued to churn out inexpensive devices for a mass market: "reliners" made from old tires; a flag holder for a radiator cap (big World War I item); anti-draft shields and "Little Shoofers" for Model-T Fords – the latter helped keep wheels straight on badly rutted roads.

The "Harko" was soon added to the line. It was the first Crosley radio receiver – a ready-to-use crystal set. Crosley's marketing acumen produced a model T of radios: it cost as little as \$9 without earphones and an antenna.

But it was not too aware of the ether floating by. Nor were the models that followed. Inexpensive, but not sensitive. There was a simple solution: Make the ether stronger. And, power-minded Powel did just that.

● Summer 1921: Department of Commerce issues license for 8DR as a "special land station." Power is 20 watts, transmitter by the Standard Precision Instrument Company, of Cincinnati.

● March, 1922: Call letters WLW assigned by the new Federal Radio commission. WLW is 65th licensed radiotelephone station to go on the air. Letters are received from Colorado, Maine, Michigan Wisconsin, Connecticut.

● November 1922: 20-watt WLW conducts DX-ing contest. Winner lives in Vallejo, California.

● January 1923: Power increased to 100 watts. A free box of candy is offered for the first letter from each state. Entries arrive from 42, the District of Columbia and three Canadian provinces. Requests for the *Crosley Radio Weekly* came from Maine, California, Cuba, Mexico, Panama and The West Indies.

● Late 1923: Power is now 500 watts. *Weekly* now mailed to 25,000 listeners. The "Lightening Bugs" club has 10,000 card-carrying members. The Crosley Orchestra plays music to be heard on Crosley radios.

● 1924: WLW power now 1,000 watts. Time shared with WMH, owned by Precision Instrument Company, at 710 kilocycles (kilohertz came later). Battles for Monday and Wednesday night ensue – for awhile, both stations broadcast at the same time on the same frequency. Arbitrated schedule has WMH alternating with WLW and WSAI on Wednesday nights of alternate months. Got that?

● June 1, 1927: WLW moved to 700 kc. sharing

time with WMAF, Dartmouth, Massachusetts, and KFBU, Laramie, Wyoming. Former operates summers only, soon disappears. Latter moves to another frequency, leaving WLW with a clear channel.

- January, 1925: WLW begins program tests with 5 kw.
- September, 1925: WLW orders 50 kw Western Electric transmitter.
- October 4, 1928: WLW starts 50 kw operation from new transmitter site at Mason, northeast of Cincinnati. Longwire antenna puts "local" signal into Jacksonville, Florida, and Washington, D.C. WOR, Newark (710 kc) complains of co-channel interference. Federal Radio Commission station list dated November 11, 1928 shows four other 50 kw stations:

660 kc - WEAJ, New York, (National Broadcasting Company).

790 kc - WGY, Schenectady, (General Electric Company), limited time.

800 kc - WBAP, Ft. Worth, (Carter Publishing Company), sharing time with KTHS, Hot Springs, Arkansas.

980 kc - KDKA, Pittsburgh, (Westinghouse Electric & Manufacturing Company).

- KFI, Los Angeles; WSM, Nashville; WCFL, Chicago; WFAA, Dallas and WTIC, Hartford, have 50 kw construction permits. And in Mooseheart, Illinois, the Supreme Lodge of the World, Loyal Order of Moose, is a-buildin' their 20 kw limited-time WJJD.

And Crosley's radio business is booming. He has bought out The American Radio and Research Corporation near Tufts College outside of Boston. By 1927, The Crosley Corporation grosses \$18 million with a profit of \$3,605,973. It has added patent medicines, scalp massagers, tire patches, the Shelvador refrigerator, the Cincinnati Reds and WSAI, a second station for local listeners. It has also begun initial plans for a compact car to be sold through department stores like Macy's.

The power of Positive Powel did not end with a mere 1-A clear channel and fifty thousand watts. Harold Vance, of the Engineering Products Division, RCA Manufacturing Company, remembers conferences about a 500 kw transmitter in May of 1932. While RCA's parent company (General Electric) and Westinghouse had experimented with up to 300 kw, there were no commercial designs for such an animal.

Evidently both parties were doing their homework, for RCA had a completed design by late that year. And in either December, 1932 or January, 1933 Crosley Broadcasting signed a contract for the beast. We must assume that the FCC had given some sort of blessing to the project, assuring that the beast would not turn into a white elephant.

And, in early 1933, the on-site installation did commence at Mason.

Some questions go unanswered at this point. Was Powel alone in his journey up the power tower? Was his application for "special authority" one of several? Many? Why was WLW singled out for the grand experiment? The initials FDR, NRA and GOP emerge from the murk of forty-six years, but the vision remains unclear.

But the political-socio-economic implications of the decision took a back seat for the

members of the WLW engineering staff. Of that we may be sure.

Up went an 831-foot Blaw-Knox diamond-shaped "vertical radiator" next to the WLW longwire. It would be a half-wave antenna, ended, and the fat middle's purpose was to handle the point of highest RF current. It alone cost 46,000 depression-dollars. The downward pressure of the tower and its pre-stressed bridge-cable guys was over 200 tons, and one giant insulator took it all. The station's call twinkled across the mid-section, which was as wide as a four-story building is high.

The old-timers in Mason came to watch and shook their collective heads. Science was wonderful.

To carry a predicted ninety amperes of RF current, a coaxial line about fifteen inches in diameter was mounted on concrete pilings across the grassy lawn of the site. The outer conductor was of aluminum, with spring-loaded expansion joints every twenty feet or so. A mica material suspended the heavy center conductor. Styrofoam would come later, like kilohertz.

But the big job was at the transmitter building. The back wall was torn out, and a new room about twenty by forty feet was added, complete with an extension on the basement. Out front, a pond 75-feet square was excavated and lined with cement. A crane on the side of the building could swing large loads into garage doors on either floor.

Up at Camden, a lot of original research would soon get a test. The 500 kw would act as

a power amplifier, using RF generated by the Western Electric 50 kw rig. Since only low-level modulation was used then, it would have its own modulator section. Imagine the look on the engineer's face who calculated the final weight of the double modulator transformers: 35,700 pounds each, including 725 gallons of oil!

The final power amplifier would actually be three PAs in parallel, a decision which was to prove most fortunate. Each PA would house four UV-866 RCA tubes — that's twelve. Add to it four more in each of the two modulator sections. Then there was the power supply, sort of a DC Incredible Hulk. The UV-866s required DC for their filaments. This would be supplied by several big generators. Cincinnati Gas & Electric ran two 33,000-volt lines toward Mason and a special substation on the WLW property. There was an automatic switchover out there, assuring power from one line or the other. 2,300 AC volts actually entered the building.

All of this original design was fitted into a cabinet about fifteen feet high and thirty feet wide. A catwalk about three from the floor led to tube compartments. Five double wooden doors, complete with interlocks, granted access to the rear.

Enough dials and meters for a small Boeing covered the front panels.

And several unusual bits of apparatus took their place here and there: a water still, which would manufacture all the distilled water for the inside cooling system. To isolate the high-

THE CROSLY RADIO CORPORATION

WLW - WSAI - W8XAL
TRANSMITTER RECORD

Operator BJ - W.S. Date May 2, 1934

TIME	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
	WLW											
LINE VOLTAGE	2320	2330	448	446	445	446	2300	2320	2310	2320	2310	2310
FILAMENT VOLTAGE	33.8	33.8	70.2	20.3	20.3	20.0	20.0	33.8	33.8	33.8	33.8	33.8
H. P. A. GRID BIAS	1400	1400	-	-	-	-	1420	1420	1410	1400	1400	1400
P. A. GRID BIAS	630	630	300	300	300	300	300	300	300	300	300	300
ANTENNA CURRENT	71	71	195	195	195	20	195	72	72	72	73	72.5
H. V. RECTIFIER	11.7	11.7	16.7	16.5	16.5	16.6	16.5	11.7	11.7	11.8	11.8	11.7
P. A. PLATE CURRENT	64	65	81	81	81	81	64	63	64	66	66	66
D. C. GRID CURRENT	3.5	3.5	-	-	-	-	4.1	4.1	4.2	4.3	4.25	4.25
P. A. TANK CURRENT	95	95	38	38	37	38.5	37	96	95	97	98	98
L. V. RECTIFIER	3000	3000	1600	1600	1600	1600	3000	3000	3000	3000	3000	3000
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2
	WSAI											
#1 CRYSTAL TEMP.	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
#2 CRYSTAL TEMP.	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
P. A. PLATE VOLTAGE	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
P. A. PLATE CURRENT	800	800	800	800	800	800	800	800	800	800	800	800
LINE CURRENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2
	W8XAL											
#1 CRYSTAL TEMP.	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5
#2 CRYSTAL TEMP.	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9
P. A. PLATE VOLTAGE	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
P. A. PLATE CURRENT	85	85	85	85	85	85	85	85	85	85	85	85
LINE CURRENT	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
CRYSTAL IN SERVICE	2	2	2	2	2	2	2	2	2	2	2	2

An Era Begins — Transmitter log for May 2, 1934, shows 500 kw testing from 5:15 to 6:30 p.m., official superpower operation starting at 9:02 p.m. by remote control from the White House. Antenna current (circle) jumps from 19 1/2 to 72 amperes. Bill Schwesinger's notes also show effects of unlimited audio peaks during dedication program. (Note: WSAI was co-owned by Crosley Broadcasting, as was shortwave W8XAL. Latter simulcast with WLW, later programmed Spanish-language fare beamed to South America.)

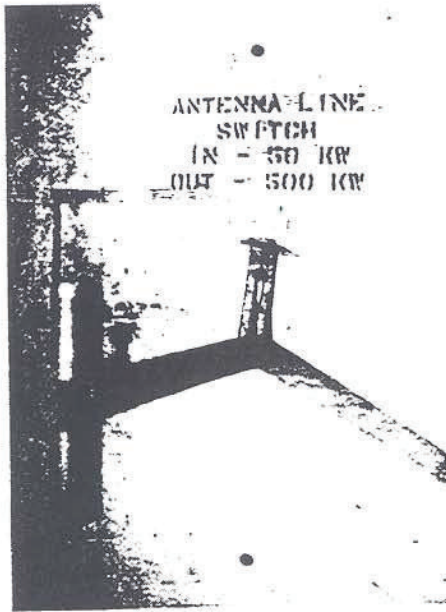
voltage B+, this water would circulate through miles of Pyrex tubing instead of metal pipes. A heat exchanger in the basement would warm a secondary system using tap water. This was routed through more big Westinghouse pumps to the outside cooling pond, where mountains helped lower its temperature before a return trip.

And oil-filled transformers would turn sour eventually, so acidity-testing and removal equipment was ready. (This may be the first transmitter in your memory which needed an oil change.)

Finally, there was a big brass nameplate. It credited the rig to RCA, although it was actually the joint effort of RCA (design), GE (RF) and Westinghouse (control). It also proclaimed a digit often quoted: "Serial Number 1."

Although Harold Vance told the FCC that installation chores were completed early in 1934, this was not the sort of thing that plugs in and plays. There were many hours of testing that winter and spring, and we can only surmise what sights and sounds the farmers just west of Mason may have heard and seen during the wee hours of a Depression spring. Diplomatically, Vance stated only that "special problems" had to be solved during both the design and installation. The test periods continued, using a test call of W8XO. Down in Cincinnati, Mr. Crosley undoubtedly waited with a certain air of impatience.

On April 17, 1934, the FCC granted Crosley Broadcasting authority to use 500 kw experimentally, during regular hours, with its regular WLW call.



Antenna Line Switch — Transferred lower antenna line from 50 kw Western Electric to 500 kw RCA.

Bill Schwesinger remembers the night of May 2, 1934 well. The Crosley transmitter log remembers him well, too — his handwriting is all over it. A signal pair had been ordered to terminate at 1600 Pennsylvania Avenue, where a man whose fireside chats had made him well aware of the power of radio was prepared to assist. The golden key which Woodrow Wilson had used to open the Panama Canal was connected.

That log shows a final high-power test from 5:15 to 6:30 p.m.

"Instantaneous" acetate transcriptions weren't available that spring night, but we can assume that Charles Sawyer, Ohio's Lieutenant Governor, the Crosley Symphony, the Crosley Glee Club, Henry Thies and His Puroil Orchestra and Virginio Marucci and His South Americans did yeoman service for the occasion, not to mention the beef filets and shrimp cocktail Louisiana.

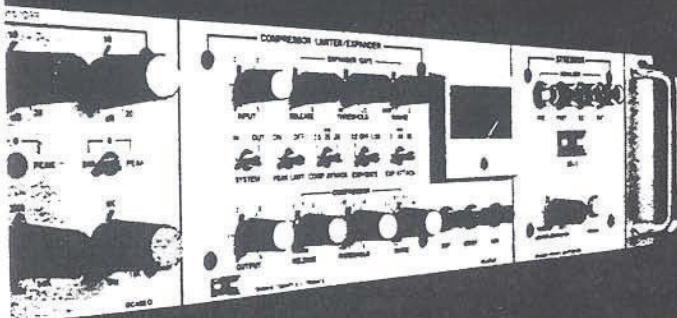
9:02 p.m. Cut to remote line from Washington. President Roosevelt: "I have just pressed the key to formally open Station WLW."

Far from the downtown festivities, I'll bet quite a cheer went up at the transmitter house. Bill made his entry in the log. Over in Mason, the street light dimmed just a bit. And around the world, folks found a new friend on their radios: *The Nation's Station*.

Al Reinhart started his career at KFJB, in Marshalltown, Iowa. Thirteen-and-one-half hours a day, six days a week for \$7.00. After stints at WHO, Des Moines; KMA, Shenandoah and KFAB, Omaha, he had collected his wife Lenore and various in-laws into a group called (with guitars and accordian) The Five Novelty Aces or (with piano and backup band) The Vocalaires. When musicians at the WLS National Barn Dance unionized, the gals were forbidden to play instruments, and would receive no pay for singing. Al remembers telling his agent to see about an audition at that high-power station in Cincinnati.

The group was unimpressed enough with

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the appearance of the studios that they first auditioned at another station. But vocal director Grace Raine hired them on the spot, and they spent the next seven years under the heavy umbrella of The Nation's Station.

"Let's face it: it was a one-station network," Al recalled in 1972. "I'm sure they tried to soften the fact for the benefit of other stations, but that's what it was. When you have daytime listeners in Honolulu, that's no ordinary Cincinnati coffeepot."

The Aces sometimes helped rouse a sleepy nation on the "Top O' The Morning" show from 6 to 7 a.m., then fell to rehearsing their Griffin program, which aired from 8 to 8:15. "We did 715 performances. Ask anyone old enough what followed 'bong-bong-bong-bong.' They'll still tell you 'It's Time To Shine.'" (I've tried it. He's right.) It was a good line for a shoe polish program.

After a part on the noontime show, the Vocalaires/Aces might also pull a performance on some nighttime program. Mrs. Reinhart remembers the extra tingle when a show would also be on "the line to New York." Just where the line terminated is a conflicting point. Best guess is WOR which, with WLW, became starting points for the Mutual Broadcasting System.

If WLW was a one-station network, it jolly well acted the part:

1 - There were no recordings on the station. None, except for sound effects. Later, some ET [electrical transcription] programs began to creep in. (In fact, a point of controversy during that time was the "transcribed" announcement which the FCC required between sides of a continuous half-hour ET show.) But nobody played the phonograph on The Nation's Station.

2 - The only thing the eighth floor of the Crosley Building may have lacked was privacy. Al Reinhart estimated 40 to 50 "legitimate" musicians, about 75 hillbilly-western ones, and a dramatic staff of 25 to 30. He wasn't far off. At an FCC hearing in 1938, station manager James Shouse set the payroll at 159 full-time, 31 part-time in the production department alone.

3 - From 1927, when WLW started originating "The Crosley Hour" for the NBC Red, the station became a growing source of network programming. During one season, twenty-two shows per week were sent to various nets. The station's own affiliation was something of a grab-bag, however: they needed it more than it needed them. Consequently, WLW took its pick from several. The 1936 *Broadcasting Yearbook* shows it as an affiliate with the Red, the Blue and Mutual. WCKY, WSAI and other Cincinnati stations evidently picked up what WLW couldn't fit into its schedule.

4 - Perhaps the most famous WLW program of all was called "Moon River," and it wasn't the Audrey Hepburn or Andy Williams variety at all. It began in 1930 to showcase the three-manual seventeen-rank Wurlitzer dedicated to the memory of Powel Crosley's mother. Naturally, Mr. Crosley wanted it to start yesterday, so Eddie Byron, the production manager, retired with some other staffers to a . . . er . . . night spot for an after-hours idea session. They combined Fritz Kreisler's "Caprice Viennoise" with some original verse,

and found the numerous . . . ah . . . ladies in attendance profoundly moved. They knew they had a winner. They did. When Peter Grant (or any of the various Moon River announcers) laid these lines over Mrs. Crosley's seventeen-rank Wurlitzer, the world listened, and nodded that somewhere all must be right tonight.

What were the golden phrases? Brace yourself:

*"Down the valley of a thousand
yesterdays*

Flow the bright waters of Moon River.

On and on, forever waiting to carry you

Down to the land of forgetfulness,

To the kingdom of sleep.

To the realm of

Moon River.

A lazy stream of dreams

Where vain desires forget themselves

In the loveliness of sleep.

Moon River.

Enchanting white ribbon

Twined in the hair of night

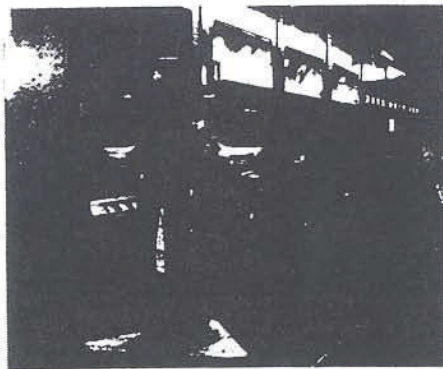
Where nothing is but sleep.

Dream on, sleep on

Care will not seek for thee.

Float on, drift on,

Moon River . . . to the sea."



50 KW Plant — Original Western Electric 50 kw rig, dedicated in October, 1928, still serves as WLW auxiliary main unit. Last three cabinet contain new circuitry. RCA type UV-898 tube (foreground) was used in 500-A amplifier.

Cue the Clooney Sisters with "Deep Purple." Cue announcers like Jay Jostyn and Don Dowd and Ken Linn with poems such as "The Roses," by John Smith, or "The Shooting of Dan McGrew."

"Dan McGrew! Who read Dan McGrew? Fire the bastard!" "But sir, it was a request from a regular listener." "No listener is going to dictate . . ." "The Duchess of Edinburgh, sir. She cabled us last night . . ."

If loyal listeners sent for free boxes of candy in 1923, that was peanuts compared to the 500 kw mail count. Said count was issued every Saturday, and the mail room was crowded with hungry egos, hoping to be the winner.

Some letters were more than the typical fan variety. Babies were named after Lenore Reinhart's "Susie" character, used on several programs. After Susie's radio birthday party on "Charlie's Singing School," the Salvation Army had to haul away the handkerchiefs, cakes and dolls. And Tex Owen, who sang and played guitar with more than the minimum charm, was willed three farms by widows he had never met!

Meanwhile, back at the transmitter, the

"special problems" to which Mr. Vance had alluded did not go away by themselves. Director of engineering Jim Rockwell, who had replaced Joe Chambers, told the FCC that WLW had 63 engineers and operators. Jim Wagner understands that up to seventeen men manned the transmitter site at times.

Why? Well, this was all virgin territory, and there had to be some measure of design deficiencies. For one, the massive power supply seemed to be both good and bad news: unbelievable as it seems in this day of multi-stage audio processing, there was no limiter amplifier — they just weren't used until the late thirties. Couple this with the sudden peaks that are bound to sneak through from 100% live programming.

Somebody would let fly with one, and the big rig would call "power!" all the way back to CG&E. During a moment of overmodulation, an AM carrier all but loses its negative side, so there you were, all powered up with no place to go. Something had to give, and it did.

WLW had a "transmitter control room" with an operator who acted as the final gain rider, and who typed a running log of what did and didn't get on the air. These are fascinating documents, for they not only show the program schedule for the station, but show the problems that continued, more-or-less, through the 500 kw period:

May 4, 1934 . . .

. . . Ma Perkins OK. 500 kw Ann OK.

Muldowny - Refrigerator Adu-off-on

2:12:12, PA #7; same one again 2:12:55; —

closing ann peaked 30. Low Down - off-on

2:29:30, PA #7 again. Sputter And Whine -

off-on 2:33:40, PA #7 and PA #8 — off-on

2:40:53. Took couple seconds 2:45 to

isolate PA #2, and #1 PA isolated shortly

after. #2 PA rushed back in service 2:47:30,

neutralizing condenser in #1 PA blew . . .

. . . 6:57:50 ten secs lost due antenna gap

holding arc . . .

. . . 7:01 transmitter off to find trouble in

coupling house, thinking it was a fire there.

. . .

The wisdom of foresight caused each power amplifier to have an "isolate" circuit, which would power it down after so much internal trouble. It left the station with some, if not all, its superpower.

Bill Schwesinger recalls especially eerie happenings when angry amperes teamed up with mother nature. Lightning loved the big Blaw-Knox, and would let loose with enough power to not only arc across the arrester gap at the base, but around the guy wire insulators, too. Once started, the RF energy would keep the arcs alive until the transmitter was shut down. Nighttime time-exposure photos exist of this sight.

Finally, a photocell device was mounted in a box, with a lens trained on the arrester gap. Wired into the interlock system, it gave the transmitter an off-on to break the arc.

Inside the building, flash-overs sounded like pistol fire. Bill remembers the huge mercury-vapor rectifiers "rattling the place" when they arced.

And not all the fireworks came from the transmitter farm. Foes cried "foul" for both technical and economic reasons. Loudest of all were WOR, Newark, (at 710 kc) and CFRB, Toronto, (at 690). Since CFRB was 375 miles

istant compared to Newark's 500, it was erided that The Nation's Station would go irectional to protect the maple leaf.

In fact, CFRB howled so loudly that on eember 21, 1934, WLW returned to 50 kw t local sunset until the directional could be completed.

Two quarter-wave self-supporting towers ere erected across the road to the south, in e middle of Everybody's Farm, which was lso owned by Crosley Broadcasting. An open- ire transmission line made from streetcar olley wire rambled across the fields. No hasing equipment was used — the line length as adjusted to do that job. When it was nished, WLW had a nice null to the north- ortheast. Power tripper note: radiation in the ull direction was only 50,000 watts!

The WOR problem wasn't so easy to solve. d Dooley, now the chief at WLWT, was in the rosley propagation department. He des- ribes a team, armed with portable ET cutters, eceivers and signal-strength meters. The eam traveled from Alabama to New England, utting discs of the first quarter of each vening hour: alternate four-minute segments f WOR, then WLW, then WOR. The discs are till extant, and give a wonderful overview of hat radios were receiving as we climbed out f the Depression.

The kitchen got hotter and hotter, but Powel rosley was committed to stay for the uration. He was not alone: by May 1, 1938,roadcasting was able to report fifteen oter applications for superpower, from KDKA, fKI, KNX, KSL, WBZ, WGN, WGY, WHAS, VHO, WJR, WJZ, WOAI, WOR, WSB and VSM. And apparently every six months, the rosley counsel battled through another six- onth extension of that 500 kw "special uthority."

And no wonder.

Romance of the superpower aside, the usiness of WLW required lots of black ink. It's illy to assume that the fiscal reward to be erived from fifty times the power of anybody else's radio station never crossed Powell rosley's mind.

Testifying before the FCC, one E. J. Ellig, omptroller for the Crosley Corporation, harted these figures for their fiscal year 1937: Gross Revenue, \$2,662,704; Net Income, \$702,954 and a Net Profit of 26.4%.

Not bad for a business "recovering" from the Great Depression.

Broadcasting for June 1, 1934, carried an tem to the effect that WLW's rates would be ncreased by ten per cent on July 1, and another ten per cent or so in October. The current evening rate was listed at \$990 per our, \$660 per half and \$440 per quarter. After the second increase, that hour would cost about \$1,200.

Opponents of WLW (and of superpower in general) were sure to have made notes in their little black books.

The business of broadcasting descended on Cincinnati in September of that year as the NAB's annual convention got rolling Septem- ber 16th — the Chesapeake and Ohio Railway taking space in the trades to advertise air conditioned comfort via its George Washing- ton, Sportsman and FFV runs.

Powel Crosley was chairman of the local committee to handle arrangements. While not

a part of the official agenda, you can bet there were numerous tours in the direction of Mason, Ohio.

Meanwhile, across the street, WCKY, Cincinnati, ran a series of double-trucks using the brave line "Doing the real job" of radio in Cincinnati. L. B. Wilson, WCKY's owner, signed a somewhat capitulatory effort in December, 1934, which read:

We are proud that our neighbor, WLW, is the greatest broadcasting station in the world. We are happy in the tribute that WCKY is accepted as the next choice for covering the Cincinnati market.

Undoubtedly, number two was trying harder.

There were limits to WLW's profit motives. Jim Shouse told the FCC that less than half of all station breaks used the name "Crosley" in them. Spot announcements were not solicited, and were never broadcast between two sponsored programs. There was careful screening of all commercial copy originating with the station. (The FCC still wondered about "Dick Tracy" as a childrens' program, and such sponsors as the Chicago Bedding Company, Kruschen Salts, and Lydia Pinkham's "Voice of Experience.")

As early as 1932, reports of WLW's pioneering merchandising service were carried. It included field men in Indianapolis, Columbus and Wheeling. Al Reinhart remembers field trips to country schools for Ideal Hams: six people, a bass fiddle, accordion, two guitars and a fiddle in one car — that was the budget. But Al never remembers being the talent for any Crosley product in either a spot or sponsored program.

Evidently those station breaks were enough.

And oh, what followed those station breaks:

UNIVERSAL SOUNDS UNLIMITED **THE NIGHTWATCH**

DAILY FIVE MINUTE DRAMATIC NARRATIVE PROGRAM
RADIO CIGARETTES OFFERED EXCLUSIVELY BY

UNIVERSAL SOUNDS UNLIMITED INC.

P. O. BOX 835, DEER PARK, WASH. 20006 509-276-2072

for additional information circle no. 11

Radio's Who's Who could be written from the WLW pay records. True Boardman, of "Famous Jury Trials." Jay Jostyn, who would later protect our life, liberty and the pursuit of happiness as Mister District Attorney. Jane Froman sang on "Moon River," and so did the Clooney Sisters — Rosemary and Betty.

When Mrs. Crosley's Wurlitzer in Studio A wasn't getting 'twined in the hair of night,' or providing music for Ma Perkins, one Thomas Waller used to experiment with it. He was fired when discovered playing one of his jazz tunes on it . . . ironically, one he called "Ain't Misbehaving."

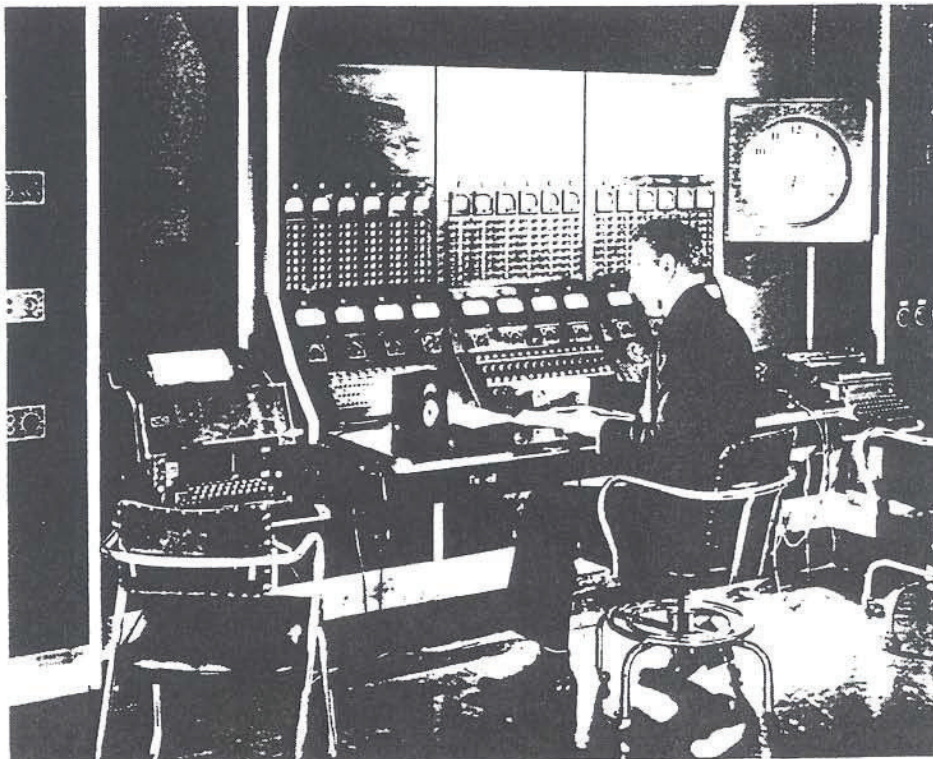
And Doris Kappelhoff sang with Jimmy Wilber's Little Band. She with the freckles.

Red Skelton originated his "Avalon Time" from the studios for one of the networks. (Anyone remember Avalon cigarettes?) There was Singin' Sam, The Lawnmower Man, before Harry Frankel moved to New York and Barbasol.

Little Jack Little. The Mills Brothers ("four boys and a guitar"). The King, The Jack and The Jester: that got shortened to The Ink Spots.

Red Barber did a mean play-by-play. Durwood Kirby did a smooth anything. Later there was Rod Serling, Eddie Albert, Dick Noel, Andy Williams, Frank Lovejoy — and don't forget the McGuire Sisters.

"The Modernaires were fired because they



Master Control — This control center fed programming down a bank of phone lines to the transmitter site. During 500 kw years, WLW program listings appeared in up to seventy-six newspapers from Texas to Connecticut. Programs were routed to WLW, WSAI, W8XAL, the "New York Line" and various national networks.

sounded out of tune," Al Reinhart recalled. "They went to work for Paul Whiteman in New York. He wouldn't have known if they were out of tune."

And the hills were alive with the sound of billies: Minnie Pearl, Ernie Lee, Skeeter Davis, Margie Bowes, Cowboy Copas, Bonnie Lou, Shug Fisher, Merle Travis, Lulu Belle and Scotty, Red Foley, Whitey Ford ("The Duke of Paducah"), George Gobel and Kenny Price. And wonderful old Pa and Ma McCormick, who tended the flock.

One year, the Saturday night Boone County Jamboree troupe (later the Midwestern Hayride as WLW's fame spread) played to 72 county fairs in five states.

The "legitimate" musicians, with their union cards, looked askance at the hillbillies with their fiddles, guitars and banjos. But the money for Western music rolled in from sponsors eager to ride the waves of the big transmitter.

And there was Smilin' Ed McConnell, all three hundred pounds of him. Has reality dimmed to legend, or did Smilin' Ed pitch the first radio per-inquiry deal for the Olson Rug Company that Sunday morning? And did so many listeners hear and follow this pied piper that the Olson Rug Company nearly went through receivership for one program that cost what a 13-week schedule did on the rate card?

And Lazy Jim Day, who played guitar and sang the news. Never wore a suit. Got married in one once. Marriage didn't work out, so he went back to bib overalls. Put some money in a bank and the bank closed. So the money went behind the bib, with the safety pins.

Al bought a beautiful new 1939 Buick. Jim saw him in the parking lot. "Would they sell me one of those?" "Sure," said Al.

The dealer was haughty. "Used cars are on the second floor." "I don't want one that someone's used," said Jim. He fell in love with a white cabriolet (convertibles came later, like kilohertz). He unpinned his cash, astounded Mr. Haughty counted out fifties and hundreds until he had enough, and off went Lazy Jim, through a fence and into the river a few nights later. No one had told him about windshield wipers.

Back in the showroom, Mr. Haughty counted out enough bills for another Roadmaster — a dry one.

Radio frequency power can do funny things, if there is enough of it. There was, and it did. Some of the WLW "resonance" stories are hard to believe, but you want to believe them anyway.

Of course, the lights in farmhouses and barns near Mason burned without the aid of CG&E. Of course, the tin roofs — indeed almost any length of wire (water pipes, fences, bedsprings) — could talk at you on a humid summer night. And the little old lady who heard voices in her head. They probably did go away after the dentist adjusted her bridge-work.

There is an elderly employee of CG&E who used to man the substation which fed one of WLW's two 33 kv industrial lines. He could tell, he says, when the station was on his line at 500 kw. The final voltmeter would dance ever so slightly in time to the music. Wow!

There were too many foes crying "foul" with ferocity. There may (or may not) have been a station owned by FDR's son which lost business to The Nation's Station. Or, a sizable contribution made to the wrong party at the

wrong time.

In any case, the regular application for another six-month superpower extension was set for hearing in 1938. Duke Patrick, former general counsel for the Radio Commission, waded into a hearing and presented WLW's case in the brou-ha-ha that took a good deal of that hot summer season.

On March 1, 1939, under a headline proclaiming "Stay Refused, WLW Returns to 50 kw," *Broadcasting* announced the end of The Nation's Station. "WLW," stated the article, "announced the power reduction February 28 to its audience with a simple news statement."

The street light in Mason would dim a few more times during the war years, and Der Feuhrer would be heard to curse "those bastards in Zinzinnati," but that is another story for when the tears have dried.

Last January 19th, the warm and well-lit studios at 3 East Fourth Street sent a well-modulated Dolly Parton through solid-state program amplifiers, but the eighth floor of the Crosley Building at 1329 Arlington was dark and damp.

The play-by-play was smooth and professional, but there was no sound in the studio where the Crosley Organ used to paint its lazy stream of dreams.

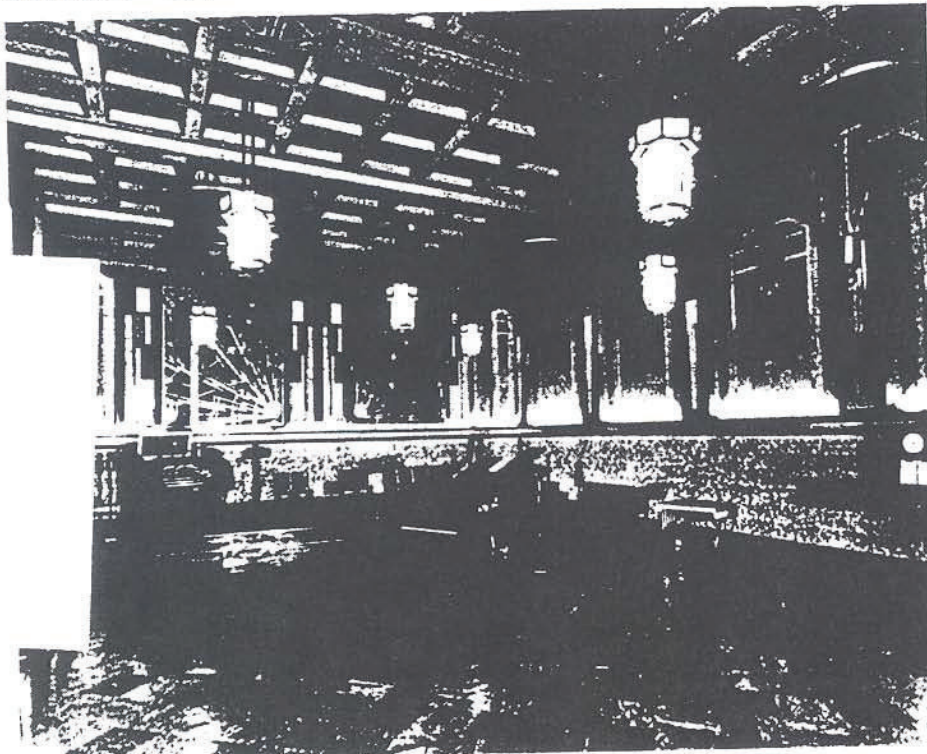
Out at Mason, a discriminant audio processor and a screen-modulated Doherty circuit created a maximum modulation envelope, but the big rig in the back room wasn't speaking to the Duchess.

The Nation's Station is from another time and place. 500 kw doesn't compute on a microprocessor. And yet, alone in the darkened back room, it seemed that the faintest of red glows came from deep within dusty glass. And listening very carefully, you could just make out the voice of Peter Grant as he spoke of an

*Enchanting white ribbon
Twined in the hair of night
Where nothing is but sleep.
Dream on, sleep on
Care will not seek for thee.
Float on, drift on,
Moon River . . . to the sea.*

Thanks go to Jim Hampton, WLW's current vice president/engineering, for permission to prowl the nooks and crannies of the big rig. And to Jim Wagner, his sidekick and unofficial tour guide, whose interest in The Nation's Station led to a job as engineer there. And to Bill Schwesinger and Ed Dooley, who were there when it happened, and can remember. To John Bruning, of WCET in the Crosley Communications Center, who let me and my camera in after hours to photograph the name plate for the 500 kw. And to Al and Lenore Reinhart, late of Al's Music in Camarillo, California, now retired and out of touch, but not forgotten. And, finally to Dick Perry, author of the delightful *Not Just A Sound: The Story of WLW* (Prentice-Hall, 1971) which should be on your shelf if you call yourself a broadcaster.

Next: An advertising doctor, goat gonads, "sunshine between the nations," and a hunt for the phantom transmitter of the Rio Grande! □ □ □



Studio A — Largest studio at the Arlington Street complex was used for "Moon River," plus large musical and dramatic shows. Pipes for the "Powel Crosley Organ" are behind grill at rear. Console, behind which "Fats" Waller is said to have hidden his gin bottles, is at left. Note unusual microphone designs — most were built by station's engineering staff.