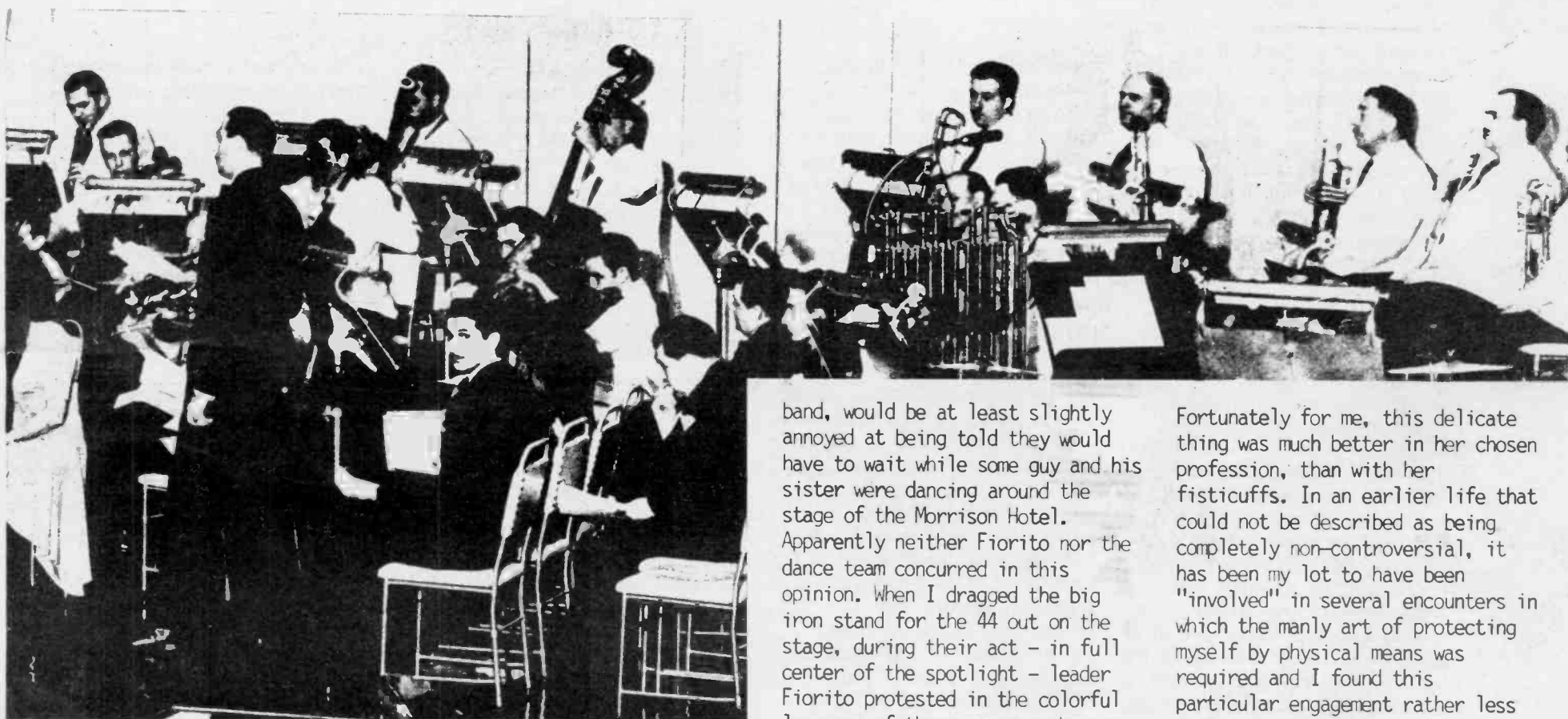


THE HORN SPEAKER



(Continued from last month.)

BROADCASTING THE BIG BANDS

By Paul C. Crum

One of the most "interesting" experiences that I had while broadcasting the big bands, occurred when I had the doubtful honor of putting the Ted Fiorito band on the air its first night from the old Morrison Hotel. The fact Sophie Tucker, "The last of the Red Hot Mamas," (whose temper seemed to be the only part of her that had not cooled appreciately at that stage in her life) headlined the stage show, did little to establish a relaxed mood of all of us in her sphere of influence, and may have contributed to the event that followed.

Relatively new at the station, I soon got broken in very dramatically. The first night patrons of such a well known supper club paid well, and expected tangible return on their considerable investment. One act on stage that night as a sort of supporting act for the great Sophie, was a brother-sister dance team, John and Edna something or other. seeing that the stage show was running over, I covered my bets by getting instruction from the studio to put out the microphones, even if the floor show were not over. The main microphone of the upcoming broadcast was a large RCA 44 ribbon microphone of the type in common studio use at the time. We were due to feed the network within a few minutes and it was generally believed that several dozen stations expecting to hear a dance

band, would be at least slightly annoyed at being told they would have to wait while some guy and his sister were dancing around the stage of the Morrison Hotel. Apparently neither Fiorito nor the dance team concurred in this opinion. When I dragged the big iron stand for the 44 out on the stage, during their act - in full center of the spotlight - leader Fiorito protested in the colorful language of those persons who come from the southern part of Europe, generally known as "the boot."

Even though, as I have admitted, I have been less than successful in impressing lovelies of the other gender, the girl in the dance team impressed me as being downright unfriendly, and growled at me in a decidedly unladylike fashion to get off the floor. Even at that youthful age, I had enough experience with unhappy members of the other gender to realize one could not always please these delightful persons and was not too concerned about her unfriendliness, that is, until I returned to the tiny control room backstage.

As I leaned over to check my amplifier a short time later, I felt a sudden and violent slap, first to the right side of my head, then to the left. A series of these followed in rapid succession.

Fortunately for me, this delicate thing was much better in her chosen profession, than with her fisticuffs. In an earlier life that could not be described as being completely non-controversial, it has been my lot to have been "involved" in several encounters in which the manly art of protecting myself by physical means was required and I found this particular engagement rather less unpleasant than most of these had been. Actual physical damage was much less than in several of these encounters that I remember, and she had the nicest perfume!

This experience proved to have had a much greater and more lasting effect on this band leader than I had realized. Several months later when I was setting up his band for a stand at the Blackhawk Restaurant, I noticed him sitting at the piano studying me almost clinically. With an air of quiet resign - almost of supplication - he told me of an effect I do not recall having had on any other person. Quietly he said, "Do you know that every time I look at you, I get so that I can't play the piano?"

Certainly, one of the most mixed up microphone setups among our remotes was at this restaurant. Although it was one of our popular pickups, it seemed that if for some

reason a piece of equipment were not any place else, it ended up at the Blackhawk. If four microphones were required, it was probable that no two were of the same type. None of the equipment in service at this time was particularly noted for its reliability. In the description of present day guarantees of performance, none of this electronic conglomeration could qualify for the seven year warranty. One memorable night I came close to recommending Joe Sanders, the Old Left Hand, for Sainthood. Band leaders, like people, come in the good, the bad and the ugly classifications. Joe had to be the most patient and forgiving of all band leaders.

This night, with sixty stations on our back, my luck ran out. A first dead mike was soon followed by another. A recounting of the several reasons for their failure, was a litany of well known electronic ills. The number two microphone had barely gone to its resting place, when the third joined its fellows. Admittedly not the smartest remote engineer, I found it very difficult to provide a balanced pickup with only one microphone operating and that located between the first saxophone and the drum. Of only casual interest to the overall, the vocalist had to sit in a low chair to be in line with the one remaining mike. While I was "sweating bullets" trying to stay on the air, Joe remained calm, saying, "Take it easy, everything will be all right. I'll sing so loud they can hear me without a microphone! Demonstrating his technique, he swung into his favorite, "Here comes my ball and chain," singing so loudly that I almost believed they could.

With a clear channel and a power of 50,000 watts at one of the best spots on the broadcast band, our coverage, particularly at night when we were broadcasting the big bands, was "adequate." A number of musicians, whose families lived in California, were listened to directly. Naturally, the number of stations carrying the bands and local conditions at the time were factors in our coverage. We were fortunate in that we were Chicago headquarters for a network of more than five hundred stations.

Our eastern network lines ran in a circle from Chicago to Detroit, New York, Washington, D. C., Cincinnati and back to Chicago. This circuit was called the Round Robin. Any station feeding this circuit, had to open the line before the next feed took over or a feedback occurred. A single line went from our Chicago switching



Rudy's birthday party at the Astor Roof, 1936, with famous orchestra leaders as his guests. He is shaking hands with Horace Heidt; Ben Bernie and cigar is between them; others include Hal Kemp, Fred Waring, Shep Field, Buddy Clark, Russ Morgan, Jerry Cooper, and Jack Smith.

point westward to Los Angeles. Being one way only at a time, this line required reversing manually at Chicago when changing the direction of feed. Later after having been graduated from the happy world of dance band remote pickups and assigned to master control, it was my job to do this switching of these programs as they were originated from, or passed through, Chicago. At Los Angeles, or "West Coast Leg," joined a network that ran along the entire west coast, called the Don Lee Network. Various random feeds came into and were fed from, or local circuits. Most older persons remember the Lone Ranger program. It came from Detroit by a special temporary feed that required setting it up ahead of time and switching it when time came for it to air. An article that presumably recounts the broadcasting of the big bands, obviously does not have space for a detailed description of either network organization, or studio broadcasting, which must be included in another type article.

From my numerous accounts of our experiences with Joe Sanders,

They are still wondering if Joe Cook really mistook one of those funny-looking new mikes for an ash tray, and absent-mindedly flicked his ashes in it. Or if it was just a gag.



it is evident that he was our favorite of all of the many band leaders with whom we worked. Along with his indicated basic decency, he had a rugged ability to live life in an active and interesting manner. A powerful raw boned man who had turned down an opportunity to play professional baseball to continue with his music, he looked as if he would be as much at home in a bar room brawl as at his piano. Joe was like father to the various band members and his vocalist. He was always good for a loan, if someone in the band were short before pay day. If his girl vocalists were bothered by one of her numerous admirers, Joe settled these matters without difficulty. The girl singer who was with his band during his stay at the Blackhawk, was endowed with physical proportions that equaled her vocal ability. These proportions seemed to peak in that general area known as her "latter part." When draped in an attractive manner, this tended to excite every virile male with normal eyesight within her range. One night as she approached the microphone for her number, a patron, weakened by a number of belts before going on the dance floor, was overcome by an understandable, but imprudent desire. As he danced by the stage, he reached out and patted this especially attractive part of the young woman we have been discussing. Ever watchful over his brood, Joe strongly indicated this was definitely forbidden territory, and warned that he should never again encroach on this area. All men are weak upon occasion, especially when they are affected by those inspiring liquids that the man had imbibed.

On his next trip by the stage, discretion was completely overcome by temptation and he stole an additional pat. Rising briefly from the piano, Joe took the patron by the collar with his left hand and by the seat of his pants with his right, and bounced him across the dance floor and out the door. He returned to the piano and commented casually to the engineer on duty, "Sometimes you have to do those things!"

The next to the last pickup of one autumn evening over, I walked back leisurely across the loop to the Palmer House for my broadcast from the Empire room. The flowing champagne music at the Trianon Ballroom that seemed to still carry me along with it, and the din of the terrace Room Supper Club, all swirled around together in my mind, that had still not quite unwound.

In the corner of the Empire Room check room, behind long lines of coats, I picked up new B batteries for the pre amp for the RCA ribbon mike that we would use for the "band" mike on the Ted Weems Orchestra that opened that night. This was one of my favorite bands, slightly smaller than some, but good. Very good. It was made up of a group of happy go lucky guys who, although all class when on stage, in keeping with the atmosphere of the place, were possessed with a natural exuberance that made this one of my favorite groups. Generally proper and restrained, I waited for a moment when I knew the band would explode into a sort of cow bell cacophony with their "Fifth Avenue" hill billy number, "The Martins and the Coys." The caution with which it had been tried out to find how the patrons of such a room would react,

proved unnecessary and it almost became the signature number of the band. Toward the end of the broadcast, the band played quieter numbers and a ballad usually preceded the theme. A quiet, nice young singer was the vocalist. When he began to sing, dancers crowded up near the microphone. Young girls, still clinging to their dated, looked up longingly and older women looked approvingly at the "nice young man," they felt they wanted to mother. All of us who worked with him felt that if he were given the opportunity, he would go on to greater things. His name was Perry Como.

Ingi, the leggy blonde, was perched on a tall stool rubbing a tired foot, as I went through the check room. The long flowing scarlet robe that was the uniform of these girls, was raised revealing a shapely limb that I had not had the privilege of enjoying before. "I think I've carried a million coats tonight," she said. "I used to be a distance runner in high school, but that was nothing as compared to this."

I patted her shoulder and assured her she'd make it. She looked up and smiled. "You never

did make it up to my apartment, did you?" We both smiled. I was glad that we were off the air and looked forward to getting in to my new DeSoto that I had gotten just two days before, and go home. It was the long, low car with the hidden headlights one couldn't see until I pulled the handle inside the car that raised the covers from over the lenses and the lights came on. It was the first new car that I had owned, and I remembered soberly



that I had eighteen monthly payments of thirty three dollars each, to make before it was all mine.

As I went out the heavy revolving door of the studio building, starting for home after sign off, I glanced back briefly at the corridors, dark now until morning, and reflected on the things of the evenings. The rattling "L" ride out to the Trianon Ballroom on the south side, for Lawrence Welk. The ride back to the Morrison—the one pickup where I never knew what might come next. It might be equipment trouble or a drunk trying to get on the air with the vocalist. Or a fight backstage. A pickup like this made one really appreciate the one that I had just finished.

When I got home, I knew Lora would have a big roast beef — or maybe a ham and cheese — sandwich, neatly wrapped in waxed paper to keep it fresh, just as she had each night of the year and a half that we had been married. She would be sleeping.

I wondered — just briefly — how I had ever gotten into the crazy world of broadcasting the big bands. The racing from a night club

to a ballroom half way across town. Or a hotel alongside the loop. Coaxing moody amplifiers, balanced on top of boxes loaded with dry batteries. And getting slapped around by a girl dancer (the one with the nice perfume).

I guess it was like Joe Sanders — the Old Left Hand — said when he bounced the drunk across the dance floor and out into Wabash Avenue, "Sometimes, you have to do those things."

Correction— At the beginning of this article in September it mentioned that Cole Porter wrote "Stardust", no, Mitchell Parish wrote it.

Many thanks to Paul Crum, W9LC, who had many favorable comments about the first half of this article, for writing BROADCASTING THE BIG BANDS. We are sure that many more good comments will be made about this second half.

Paul C. Crum
6272 North Cicero Avenue
Chicago, Illinois 60646



On the Air

by durrell roth

A few days ago. I read an article in a national magazine for retired people that dealt with radio and radio programs in years past. The author was reminiscing about the first radio his family owned and how he remembered the day his father brought the set home.

I think that most of us have fond memories of early radio shows and maybe even remember the family's first radio. I can't remember our first set, but the first one I do remember was a Zenith table set, a radio-phonograph combination that Mom kept in the kitchen. During supper we would listen to the six o'clock news. Later there would usually be some program of interest, so Mom and Pop would sit around the kitchen table, have a snack, and "watch" the radio.

When I was about ten years old I remember listening to an evening show—I think it was called Fireside Theater—that opened with the sound of a horse-drawn carriage pulling up in front of a theater and the

You would hear the theater door open as we went inside and again the announcer "... ah, there's a warm fire in the fireplace, let's take our seats and enjoy tonight's performance".

announcer saying "...here we are, let's buy our tickets and go inside". The announcer would always buy two tickets, you would hear the theater door open as we went inside and again the announcer "... ah, there's a warm fire in the fireplace, let's take our seats and enjoy tonight's performance". Those were warm, comfortable evenings around the radio with only occasional comments from the family during the show.

Daytime listening around my house consisted mainly of Arthur Godfrey, Art Linkletter's House Party and various soap operas, although I didn't hear many of them unless I was home from school. On Saturdays, I listened to kid's shows like Big John and Sparky, The Lone Ranger and similar programs.

Sometime in the 'fourties, my dad got a small white

bakelite radio of unknown manufacture that he kept in his bedroom and occasionally transferred to the workshop where we'd listen to the Saturday Night Barn Dance and Cook's Hoedown Club live and direct from downtown Houston.

The real prize of a radio in our family came to us when I was about twelve. It was a two-tube battery set that was my Dad's family radio and was used in a farmhouse on the plains of Nebraska near the small town of Shickley. Although I was extremely happy to have the radio in my younger years, it didn't mean as much to me then as it does now. Thank goodness Pop stored the set for me until a few years ago! The radio is an RCA Radiola III, 1923 vintage, now fully restored, still being used to drive the same headphones my dad used and still receiving some of the same stations it received back then.

When the radio was used in the 'twenties, it sat on a small table in a corner of the living room connected to batteries on the floor and an outside aerial and ground. The aerial was several hundred feet long, running

from the radio up to the second floor eaves of the farmhouse out to the top of the windmill tower and down to the barn roof. The ground was a car axle buried just outside the living room window.

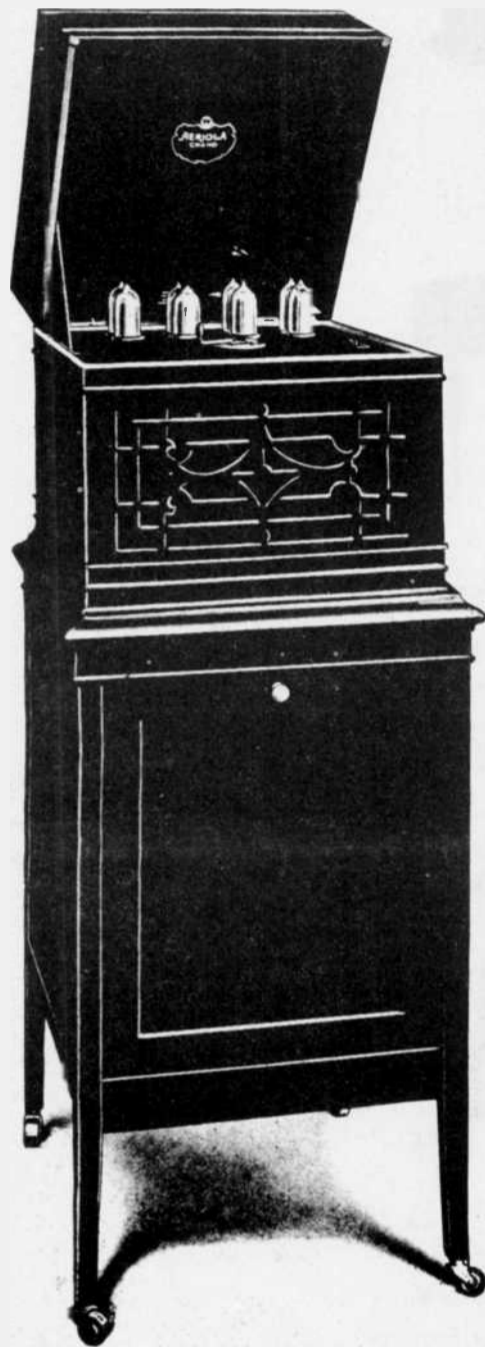
In those days there were comparatively few signals on the air, and in the country near Shickley only two stations were consistently heard: the most popular KMMJ in Clay Center and another forty miles to the north in York. When the weather was cold and at night when local stations signed off, signals from other parts of the country could often be heard: at the time the best DX was KOA in Denver, Colorado.

Today, a special power supply replaces the batteries, and I use a small indoor aerial connected exactly as outlined in the original owner's manual. The set, being fully restored, receives all the local stations, has very good fidelity and, even with marginal conditions, will receive most of the popular stations around the country, including WLS (Chicago), WSM (Nashville) and KOA in mile-high Denver.

R A D I O C O R P O R A T I O N O F A M E R I C A

1922

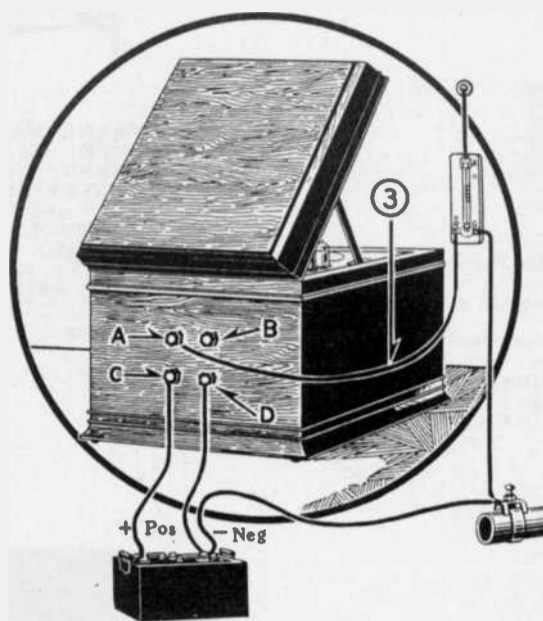
THE AERIOLA GRAND



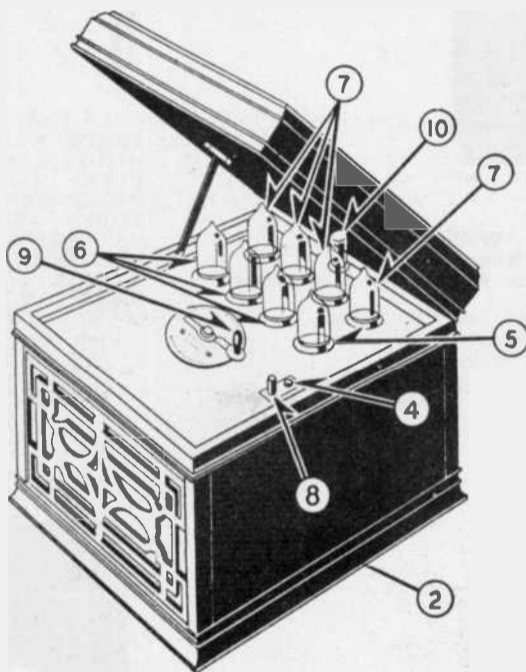
OPERATING INSTRUCTIONS FOR AERIOLA GRAND

Numbers Correspond with Diagram

- No. 1. First, refer to accompanying sketch, then erect antenna and place protective device in position as described on page 56.
- No. 2. Place Aeriola Grand on table or stand and connect wire as shown herewith. The two wires connecting the Aeriola Grand to the protecting device should be separated by at least one foot. No. 18 rubber-covered wire may be used for connections. The rubber covering on each end should be carefully removed and the wire scraped with a knife until bright. The clean bare wire should then be placed under the terminal caps and these caps screwed tightly into position.
- No. 3. The wire from terminal R of the protective device connecting to terminal A of the Aeriola Grand should be removed and connected to terminal B when signals below 350 meters are desired.
- No. 4. Press the black button of the snap switch, thus disconnecting the battery.



Illustrating easy method of connecting aerial ground and filament storage battery.



Text numbers correspond to above diagram.

- No. 5. Insert Model WR-21-D Aeriotron detector tube into the right hand front socket so that stamped trade mark is facing toward front of cabinet. Tube should be pressed firmly into socket.
- No. 6. Insert three Model WR-21-A Aeriotron amplifier tubes in the remaining front sockets.
- No. 7. Insert four Model WB-800 ballast tubes in rear sockets. Be sure that pins register with holes and press firmly into place.
- No. 8. Press red button of snap switch (4) clear down. All Aeriotron filaments should now be lighted.
- No. 9. Slowly rotate tuning handle over the scale until sound is loudest.
- No. 10. This plug should be used to replace the front left-hand tube if the broadcasting station is so near as to make the sound abnormally loud.

Caution: Always press black button of snap switch (4) when not using instrument, as this conserves battery energy.

Complete Aeriola Grand Broadcasting Receiver, Model RG, and Mahogany Stand, 150-550 meters, with six volt Storage Battery, Model 6HR-9, Rectigon Battery Charger (6 ampere size), Receiving Antenna Equipment and Full Instructions.....	\$409.50
Aeriola Grand Broadcasting Receiver, as above, less Stand, Storage Battery, Charger and Receiving Antenna Equipment.....	\$325.00
With Stand	\$350.00
Mahogany Stand Only.....	\$35.00

Dimensions: Receiver Cabinet, 21 in. x 17½ in. x 14½ in. Stand, 31¼ in. high x 22¾ in. x 19¾ in.

Weights: Net 50 lbs.; Shipping 70 lbs., with Stand 140 lbs.

NOTE: For Prices of other Complete Receiver Combinations, see page 35.

33

David Sarnoff

ON January 3, 1930, David Sarnoff was elected president of the Radio Corporation of America, one of the highest honors conferable in the radio world. His career, from his very entrance into industrial life, has run parallel with the vast expansion of radio communications throughout the world. Still a young man—barely thirty-nine years of age—he has directed, as general manager of the R. C. A., the operating activities of the first American owned and operated system of wireless communication. Later, as vice-president and subsequently as executive vice-president of the company, he helped to organize and shape a great developmental program in electrical communications that brought the radio industry to the forefront of industrial achievement.

Born in Southern Russia, Mr. Sarnoff came to America as an immigrant with his parents when he was only a child. When he was fifteen he secured a position as an office boy with the Marconi Wireless Telegraph Company of America. This was the beginning of his meteoric rise to eminence in the radio field. He became commercial department manager of the Marconi company and, in 1919, general manager of the R. C. A.

With the first faint rise of the broadcasting art in the United States, Sarnoff saw the opportunity for the development of a



DAVID SARNOFF

new service and a new industry. His pioneer experience in the art aided in the program of industrial and patent mobilization that made it possible for the United States to assume an immediate and leading position, not only in international wireless communications, but in the new industry that broadcasting had brought into being.

He was a leading figure in the organization of a permanent broadcasting service, improved broadcasting programs, and the acquirement of more talent and national coverage. In 1928 David Sarnoff became president of RCA Photophone, Inc. His negotiations later resulted in the formation of the Radio-Victor Corporation and the General Motors Radio Corporation.

His contributions to radio have been tremendous. He has been a vital and significant factor in the molding of the radio world in its present form, and, considering his past achievements, R. C. A. may consider itself fortunate indeed to have such a man as David Sarnoff at its head.

SPEAKER FROM SWEDEN

Bengt Svensson from Skaerholmen, Sweden is scheduled to speak at the coming Vintage Radio and Phonograph Society / Antique Wireless Association 1987 Convention in the Dallas area. He plans to talk about the last of a great transmitter in wireless history, the Alexanderson transmitter. Interested? See the V.R.P.S. layout.

(Concluded from last month.)

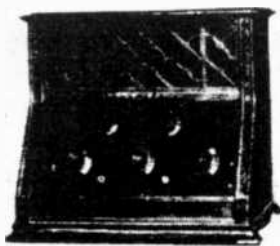
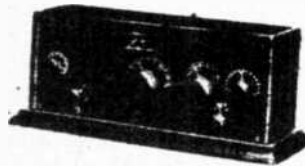


TRADE NAME: "Workrite Aristocrat."
TYPE: Neutrodyne with built-in loud speaker.
TUBES: Five.
BATTERIES: Compartment in cabinet for "A" and "B" batteries.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: \$350.00 without accessories, but with loud speaker.
MANUFACTURER'S NAME: Workrite Mfg. Company.

TRADE NAME: Zenith.
MODEL: Four R.
TYPE: Regenerative detector and three audio frequency.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outdoor.
PRICE: \$95.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.



TRADE NAME: Wells Receiver.
MODEL: 24.
TYPE: One radio, detector and two audio.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outside or inside.
PRICE: \$70.00 without accessories.
MANUFACTURER'S NAME: Wells manufacturing Co.

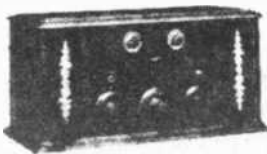


TRADE NAME: "Workrite."
MODEL: Radio King.
TYPE: Neutrodyne with built-in loud speaker.
TUBES: Five.
BATTERIES: "A" and "B" needed.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: \$180.00 without accessories.
MANUFACTURER'S NAME: Workrite Mfg. Company.



TRADE NAME: Zenith.
MODEL: Super 8.
TYPE: Two stages tuned radio frequency, detector and three audio.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: \$250.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: Wells Receiver.
MODEL: 25.
TYPE: One radio, detector and two audio.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outside or inside.
PRICE: \$65.00 without accessories.
MANUFACTURER'S NAME: Wells Manufacturing Co.

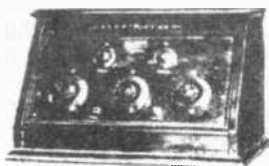


TRADE NAME: Wright.
MODEL: 5A.
TYPE: Tuned radio frequency, detector and audio frequency.
TUBES: Five.
BATTERIES: "A," "B" and "C" furnished.
CONTROLS: Three.
AERIAL: Outside or inside.
PRICE: \$160.00 including tubes and batteries.
MANUFACTURER'S NAME: H. Earle Wright.



TRADE NAME: Zenith.
MODEL: Super 9.
TYPE: Built-in loud speaker.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: \$350.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: "Workrite."
MODEL: Airmaster.
TYPE: Neutrodyne.
TUBES: Five.
BATTERIES: "A" and "B" needed.
CONTROLS: Three.
AERIALS: Inside or outside.
PRICE: \$120.00 without accessories.
MANUFACTURER'S NAME: Workrite Mfg. Company.

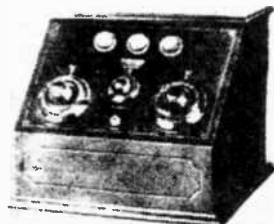


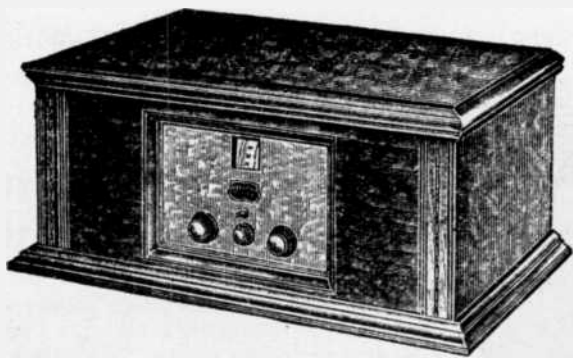
TRADE NAME: Zenith.
MODEL: Three R.
TYPE: Regenerative detector and three audio frequency.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
LOOP: Outdoor or indoor.
PRICE: \$160.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.



TRADE NAME: Zenith.
MODEL: Super 10.
TYPE: Built-in loud speaker and battery eliminator.
TUBES: Six.
BATTERIES: House current employed.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: \$350.00.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: "Workrite Chum."
TYPE: Reflexed Neutrodyne.
TUBES: Three UV-199.
BATTERIES: Compartment in cabinet for "A" and "B" batteries.
CONTROLS: Two.
AERIAL: Inside or outside.
PRICE: \$65.00 without accessories.
MANUFACTURER'S NAME: Workrite Mfg. Company.





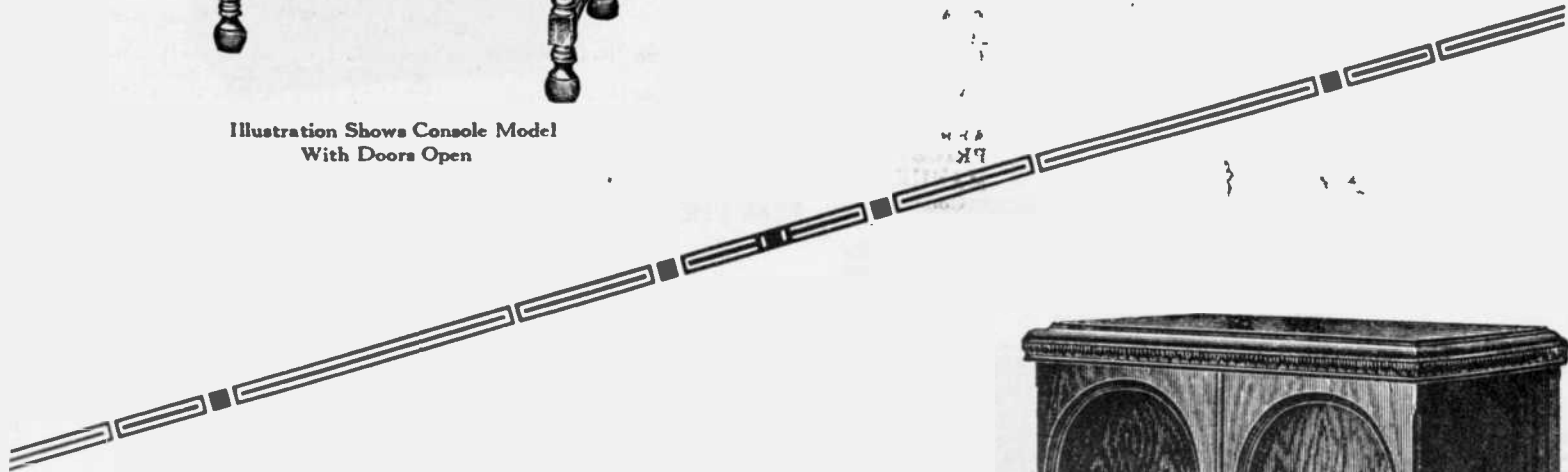
1930 CLEARSTONE model 112 has a solid walnut cabinet and uses a 210 tube.



Illustration Shows Console Model With Doors Open



Illustration Shows Console Model With Doors Closed



APEX AC A200M, 1927 Model 36 inside



APEX AC A400D, 1927 Model 36 inside



NATIONAL
NC-100A NC-101X
NC-100XA NC-101XA

These 11 tube superheterodyne receivers are self-contained (except for the speaker) in a table model cabinet that is readily adapted to relay rack mounting. One stage of R.F. and two stages of I.F. are used. Low loss insulation and high-Q coils give ample sensitivity and selectivity. Separate R.F. and Audio Gain Controls and a signal strength meter are mounted on the panel. Other controls are tone, CW Oscillator, AVC with amplified and delayed action, a B+ switch, and a phone jack. A self-contained

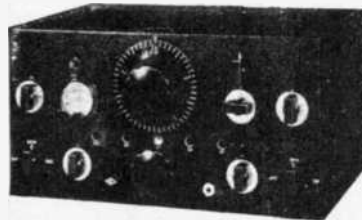
power supply provides all necessary voltages including speaker field excitation. The range changing system is unique in that it combines the mechanical convenience of a coil switch with the electrical efficiency of plug-in coils.

The NC-100A, illustrated above, covers the range from 540 KC to 30 MC. The large full vision dial is calibrated directly in megacycles and a separate high speed vernier scale provides high precision in logging. The NC-100XA is similar but equipped with a crystal filter.

The NC-101X, illustrated below, is built strictly for the amateur bands and covers only the following ranges: 1.7-2.05 MC, 3.5-4.0 MC, 7.0-7.3 MC, 14.0-14.4 MC, and 28.0-30.0 MC. The NC-101X is equipped with a crystal filter, S-meter, and the PW type instrument dial.

The NC-101XA has the same features as the NC-101X, except for the direct reading dial and the cabinet, which are similar to the NC-100XA. Prices are the same as for the NC-101X.

The battery models use 9 tubes. Power output of AC model 10 watts, battery model 2 watts.



NC-100A — complete with tubes. AC model — 10" speaker in cabinet. List Price, \$200.00
 Battery model — 8" speaker in cabinet. List Price, 184.17

NC-100XA — complete with tubes and crystal filter. AC model — 10" speaker. List Price, \$237.50
 Battery model — 8" speaker in cabinet. List Price, 221.67

NC-100SA — complete with tubes. AC model — 12" Rola G-12 Speaker. List Price, \$222.50

NC-100XSA — complete with tubes and crystal filter. AC model — 12" Rola G-12 Speaker. List Price, \$260.00

NC-101X — complete with tubes. AC model — 10" speaker in cabinet. List Price, \$215.00
 Battery model — 8" speaker in cabinet. List Price, 200.00

NDC-10 — Metal Cabinet for 10" speaker, same finish as receiver. List Price, \$6.00

NDC-8 — Metal Cabinet for 8" speaker, same finish as receiver. List Price, \$5.00

Note: Cabinets for 12" speaker chassis cannot be supplied. RRA Relay Rack Adapters, designed for mounting any of the above receivers in a standard relay rack.

List Price, per pair, \$2.50

Note: 230 volt 50 cycle and 115 volt 95 cycle models of above receivers available at slightly higher price.

Shipping weights: NC100A, 70 lbs. — NC100XA, 71 lbs. — NC101X, 71 lbs.



NATIONAL NC-80X

This inexpensive receiver has exceptional operating characteristics. Ten tubes are used in a high gain superheterodyne circuit. The IF amplifier is of entirely new design, operating at a frequency of 1560 KC, and providing a high order of image suppression, better, in fact, than that obtainable in many receivers having elaborate preselectors.

The crystal filter (2nd IF stage) has continuously variable selectivity from 400 cycles to 5 KC. The range of the phasing circuit (heterodyne elimination) has been similarly extended.

The tuning system employs a multiple scale dial of the full-vision type, accurately calibrated in megacycles. RF and IF circuits are air dielectric condenser tuned.

Automatic plug-in coils are used, controlled by a knob on the front panel, as in the NC-100. The frequency coverage is continuous, except for a small gap at 1560 kc., from 550 kc. to 30 mc., in four ranges.

The NC-81X is a special amateur model covering the following bands only: 1.7-2.05 mc., 3.5-4.0 mc., 7.0-7.3 mc., 14.0-14.4 mc. and 28-30 mc. The dial is calibrated in megacycles.

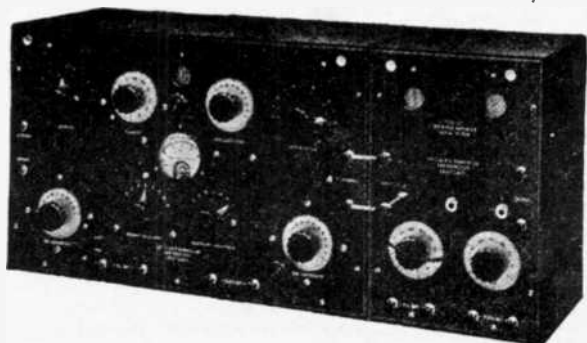
The NC-80X receiver can be furnished at \$10.00 list additional price with either a special high frequency (30-45 mc.) range or a low frequency range (200-550 kc.) in place of one of the standard ranges. When ordering, specify which standard range is to be omitted for the special range.

NC-80X — complete with tubes, crystal filter, 8" PM speaker, in cabinet for 115v. AC or DC. List Price, \$165.00

NC-81X — Amateur Model, complete with tubes, crystal filter, 8" PM speaker, etc. for 115v. AC or DC. List Price, \$165.00

Note: Either of the above receivers can be supplied modified for Battery Operation ov. heater, 135v. B-supply. To order, add "B" to symbol number. List prices are the same as the corresponding AC-DC model.

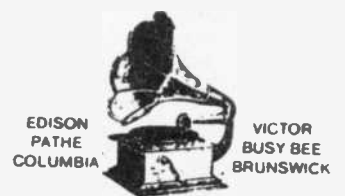
Shipping Weights: NC-80X, 44 lbs. — NC-81X, 45 lbs. — Speaker in cabinet, 15 lbs.



Interesting to compare the classic quality of two sets spread 17 years apart. This Kennedy Universal 110 was made in 1922 for \$250.00. The National NC-100A, pictured above, was made about 1939.

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P. S. ELMER O. OSTERHOUDT OF MODERN RADIO LABORATORIES, MRL, of California passed away a couple of weeks ago. He was the leading authority on crystal sets and vacuum tube old radios. Through his encouragement, MIDCO was founded, and hopefully will carry on where he left off since starting MRL in 1932. For more details, write the following family member: Mel Osterhoudt, 11 Summerwalk Ct., Nuport Beach, CA 92663.

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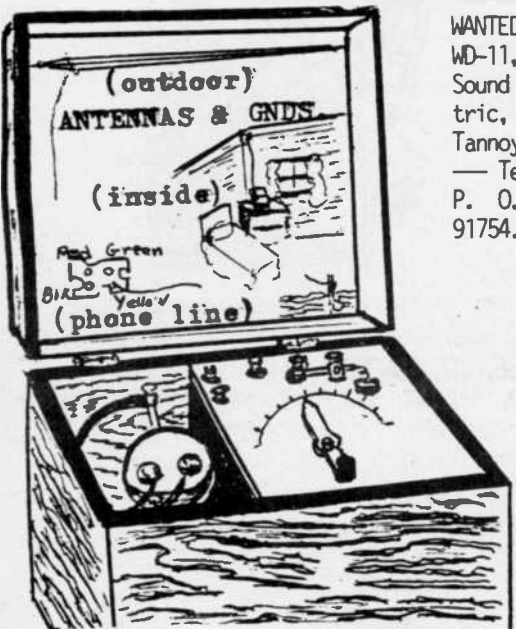
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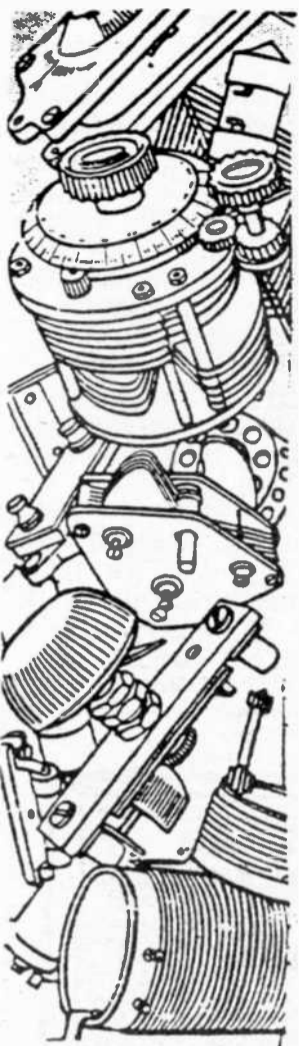
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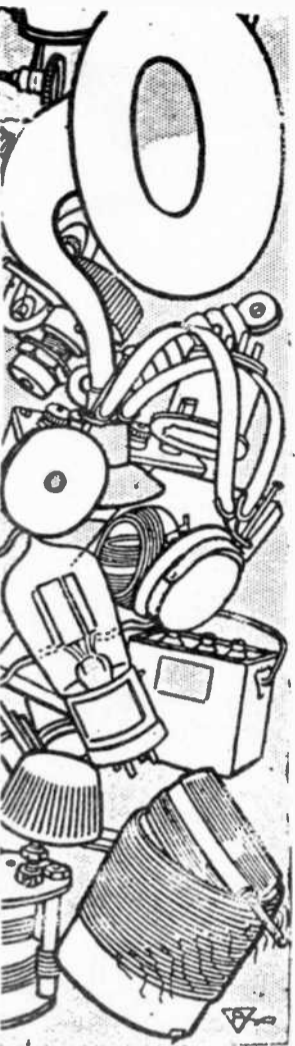
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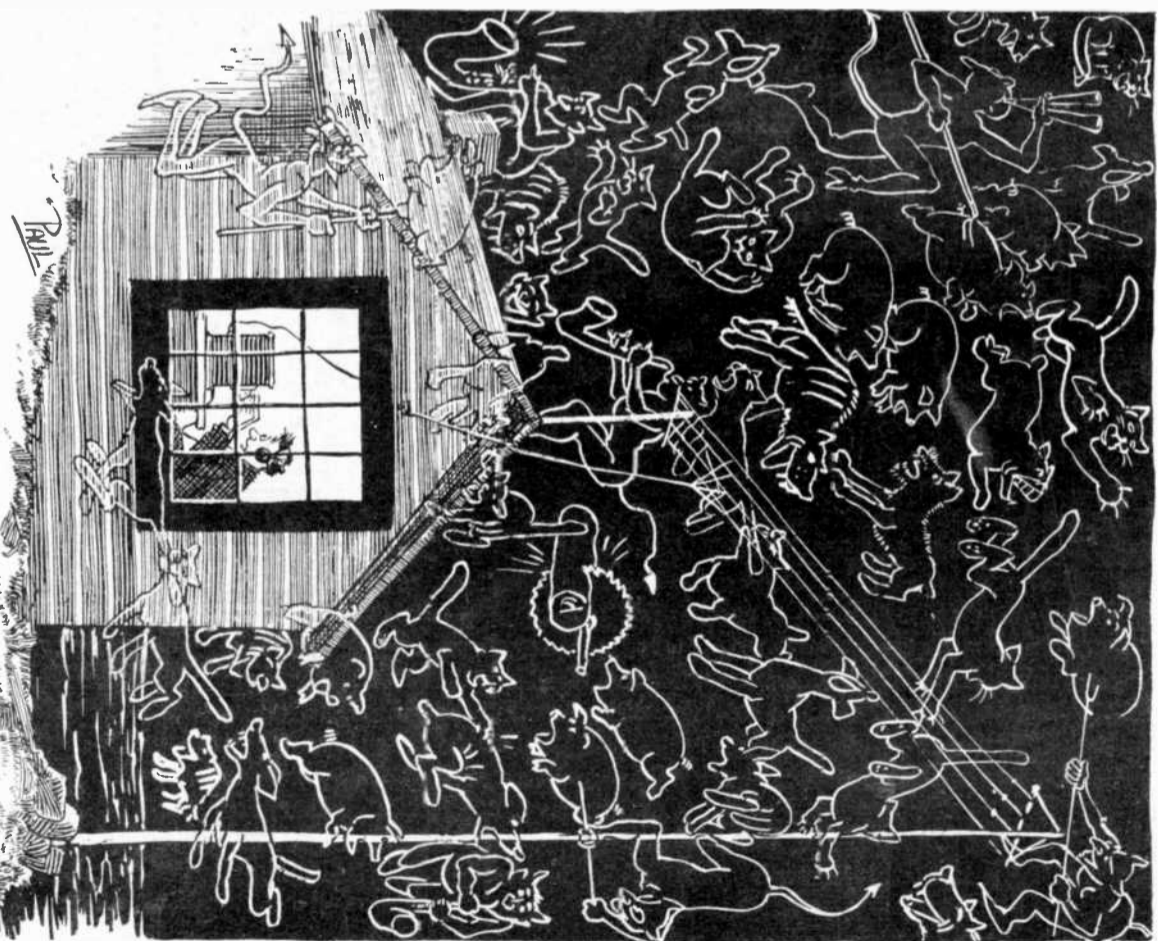
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