

cept for special programming on Sunday. During Thanksgiving Weekend, we started broadcasting the syndicated "Fat Music Show" each Saturday night, which is a DJ from the old KFAT Gilroy playing their old format for two hours, with visits from various ex-K-FAT'ers. (Hip, hip hooray! As an ex member of Club Le Fat, I'll be sending you a tape, jim-Rth.) We've had a lot of publicity about carrying the show and lots of positive listener reaction. Also, KTOM is 100% country, with separate country formats during the non simulcasting hours.

Looks like we knocked off all the competition, as KTOM is also the only country station in our market now and still number 1. Non-market stations like KWSS (ex-KFAT-Rth.) have slightly higher numbers. KSCO 1080 Santa Cruz has dropped '60s oldies and has gone satellite (Transtar) with MoR automated, except live in morning drive and for local news. They've also dropped AP Net for CNN on the hour. Last week, KNZS 1540 (studios in Monterey with sister station KMBY 107.1) dropped their all-news format. Currently they will simulcast with KMBY, but according to news story on KMST-TV on 01 January, they will be KMBY-AM and go to a sports-type format. (So the old KMBY calls resurface on AM-Rth.) They're up for sale and up to their you-know-what in bills! (Continued next week-Rth.)

RIC HEALD, 8539 BELLAMY WAY, SACRAMENTO, CA 95828 (916) 386-8677 FRI/SAT

Howdee. Back from the wilds of the Pacific Northwest and now I realize why I don't live there: Winter, hi. Took along the GE Superadio this time so I could DX FM as well. Results being sent to WDXR and should appear next week. Was surprised to hear KRAK, was expecting Boise. And of course, with sunset to the south earlier, California really hauled you-know-what. Was really blown away with being able to totally null KJET 1590 and take clear copy of KMTI Manti, Utah (eat your heart out Seattle, hi). Even more surprising on FM to pull in a couple Yakima stations from across the Cascades. Because my listening post was outside across the parking lot from dad's place, I also managed to get my first cold in two years. I mean when the second snowflake hit my face I decided it was time to go indoors, hi.

While in Lacey, phone bp and he suggested that since Louisville is locked in for this year, why not Sacramento as the convention city for our 25th anniversary? Why not? Located on three major highways, two rail lines, a mini-hub for the "friendly skies," comparatively low motel/hotel rates for western major cities, why not Sacramento? OK, time to draft Kaskey, hi.

Jim, good to see the KFAT style back on the air. I tried a little of that nightly at KRED, but from 0000-0100 PLT, and I too got positive response. Most of the music came from my own collection and I transferred on to cart so the station would have copies on hand should there be requests. Who've ya got there, Sully, Jim, Harold? Harold had a show for a time on KERG Garberville shortly before they went dark. Shortly after they went dark, one of the station's personnel was found off the road and down a ravine. Good to see country the number one format in your market. Do you really think 1540 can make it with their new format? Also, when you simulcast, does it originate from the AM or FM studio. I've been to KTOM, but like 15 years ago. Still have a photo of the board somewhere around here.

Locally, someone is using something that made my noise problems of the past seem like nothing. I mean this "thing" is making reception of KGO difficult! And all the wiring in this development is underground! I would take the FRG out to the backyard, if only it would stop raining long enough to do so, hi.

Looks like an all California WDXF unless bp would like to add a few notes (hint, hint). That's it this time around. 73 de Rth. .

Bruce Portzer- 6546 19th Avenue NE - Seattle, WA 98115

Okay, I'll add a few lines. Congratulations to Jim Hilliker & Gerry Thomas on their impending offspring. Somehow, I missed out on hearing lots of DX after my daughter was born because she starting sleeping straight through after about 2 weeks. The only station she helped me log was KXOX-1450, hrd 5/10 at 3 am after putting her back to bed. However, she's recently been treating us to a phenomenon I call "bedtime enhancement", where her audio output goes up by 10-20 db just before she fades out for the night. It's a lot like the sunrise enhancement sometimes heard on TP DX stations, hi.

Locally, KJET-1590 may soon drop their new wave & alternative rock format in favor of something a little blander; main reason, if it happens, is the 0.0 they pulled in the latest Arbitron ratings. Also, KKKMO-1360 is now big bands & nostalgia (ex rock oldies), except for afternoon drive time, when they're Spanish. Weird combination, hi.

Don't forget to report to the anniversary issue. 73.

BROADCAST PIONEERS: POLICIES AND STATIONS

Thomas H. White
September 1, 1987

Despite extensive interest about the formation of the American broadcasting service and its pioneering members, there has been a dearth of information about a number of fundamental topics. This is designed as an overview and reference source for some of the neglected areas, spotlighting the period through May of 1922.

FORMATION OF THE BROADCASTING SERVICE

The formal inauguration of the broadcasting service took place in September of 1921 (1), with the assignment of two wavelengths: 360 meters (833 kilohertz) for entertainment, defined as "news, concerts, lectures, and such matter", and 485 meters (618 kilohertz) for "crop reports and weather forecasts". The use of two different wavelengths reflected the department practice of segregating different activities on different wavelengths. Individual station authorizations were issued for either or both of the wavelengths, depending on the service the station provided. Although broadcasting activities had been evolving for more than a decade, this allocation was the first to designate stations specifically licensed for, and restricted to, public broadcasting, using wavelengths exclusively set aside for the broadcasting service.

The choice of these two wavelengths was apparently ratification of previous practice. Two stations, operated by the Westinghouse Electric and Manufacturing Company, already held licenses authorizing radiophone operation on 360 meters: KDKA, East Pittsburgh, Pennsylvania, which received its initial license October 27, 1920 and began daily transmissions with election returns on November 2, 1920, and WJZ, Newark, New Jersey, which received its initial authorization in May of 1921, but did not begin regular broadcasts until the first of October. (3) Westinghouse officials had specifically requested the use of 360 meters to avoid interference from other services, (4) and the wavelength apparently had never been previously used. (5)

The status of the other broadcasting wavelength, 485 meters, prior to its assignment to the broadcasting service, is less clear. However, an experimental station, 5XD, operated by the New Mexico State College in State College, New Mexico, is reported to have used it for transmitting telegraphic "time signals, weather reports, and news items", and then, beginning in early 1920, for voice transmissions including music and educational talks. (6)

LICENSING POLICIES AND PROCEDURES

At the time of the creation of the broadcasting service, licensing was conducted under the provisions of the Radio Act of 1912. Although the standard since the 1927 formation of the Federal Radio Commission has been that stations serve the "public convenience, interest, or necessity", (7), no comparable guideline was mandated

by the 1912 act, and licensing of the pioneer broadcast service stations amounted to little more than registration. Licensing authority at the time of the creation of the broadcasting service was vested in the Secretary of Commerce, and exercised through the Bureau of Navigation. This body operated on a much more informal basis than successor regulators. Moreover, control was much more decentralized, with oversight, performed primarily by regional Radio Inspectors, generally limited to insuring that stations met technical standards. (8)

The standard procedure for procuring a broadcast license in the early twenties was as follows: the prospective station operator filled out an "Applicant's Description of Apparatus" (Form 761), obtained from the region's Radio Inspector. (9) The completed form,

which provided mostly technical information, was submitted to the inspector, who, if deemed necessary, inspected the proposed apparatus. Next the form, including the inspection report plus a recommendation on the type of authorization to be issued, was forwarded to the Commissioner of Navigation in Washington, D.C. (10)

Here two distinct steps were taken: first call letters were assigned to the application, then, if everything was in order, a formal operating authorization was issued. The period between the assignment of call letters and formal authorization ranged from immediate action to as much as forty days, and according to Commerce records was usually in the range of one to three days.

The assignment of a call sign, usually recorded in the files as taking place when the Form 761 was received, was not considered as establishing a station. New stations were not reported in the RADIO SERVICE BULLETIN until the first operating authorization--usually a license but in a few cases a preliminary telephoned or telegraphed authorization--was issued. (11)

License periods for broadcasting stations ranged from as few as ten days (12) to one year, with one year licenses the norm for grants made until early January, 1922, six months the standard during mid-January, 1922, and three months the norm thereafter. License renewal was obtained via the submission of an updated Form 761 at the required intervals.

The above covers the standard and normally used procedures, although Commerce files report the process was speeded in a few special cases by direct letters, telegrams, and telephone conversations between applicants and Washington officials.

STATION DELETIONS

Station deletions in the early twenties were performed with even less formality and consistency than licensing. When a station discontinued broadcasting before the end of a license period, the station operator could return the license for cancellation. However, it appears that in most cases the station owners didn't bother--instead they just let the licenses expire in due course. Moreover, the lapse of a station license was seen as no more than the close of an operating authorization, and rarely resulted in immediate deletion from the official station lists. Generally a grace period was allowed, on the assumption that many would eventually receive another license.

The timespan between the expiration of a license and formal deletion varied greatly, and according to Commerce files most stations were not removed from the published lists until one to six months after their operating licenses had lapsed. The whole process has a distinct "we'll delete them when we get around to it" feel, and appears to have been to some degree dependent on the diligence of the district Radio Inspectors.(13) Because of the flexible deletion practices, the number of stations deleted in a given month is by no means a precise barometer of the decline in activity for that month, as the licenses for many of these stations had in fact expired a number of weeks or months previously. Likewise, official lists of this period invariably include stations no longer holding active licenses, and merely awaiting formal removal.

TEMPORARY STATIONS

One category of broadcasting stations has been almost completely undocumented--that of temporary grants. These were issued for special occasions, usually lasting a month or less, and were not reported in the RADIO SERVICE BULLETIN. There is very little detailed information about these grants recorded in the Commerce files, although at least seventy were issued in the period from January, 1922 to October, 1928. For temporary grants made through May, 1922, where wavelength information is recorded, the wavelength assigned was always 360 meters.(14) Detailed histories for five temporary stations operated by educational organizations can be found in EDUCATION'S OWN STATIONS.(15)

Listed below are the fifteen stations listed in Commerce files as receiving temporary grants for the period through the end of May, 1922. Commerce records for these stations are minimal, and as there is apparent source of additional information, save for those stations documented in EDUCATION'S OWN STATIONS, there can be no guarantee of completeness.

TEMPORARY BROADCAST STATION GRANTS THROUGH MAY, 1922

1st Air date	Call Assign	Call	Location	Grantee/notes
1/--	1/20	WPU	Buffalo, NY	Buffalo Courier and Enquirer
2/--	2/2	KDP	Seattle, WA	Saint James Cathedral
2/23	2/22	WHO	Kansas City, MO	Kansas City Post (2 days)
3/--	3/1	WWS	Pella, IA	Fowler Telephone Company
3/10	3/--	WBI	Marquette, MI	Northern State Normal School (2 days)
3/16	3/6	WTB	Evansville, IN	Sieffert Electric Company
3/--	3/10	WSH	New York, NY	Experiment Information Service (2 days)
3/23	3/20	WMX	Port Huron, MI	Port Huron Times Herald (also for 3/27/22)
3/27	3/9	WTA	Uhrichsville, OH	Board of Trade
3/--	3/27	WDS	Richmond, VA	Mann S. Valentine
4/16	4/15	WAAT	Jersey City, NJ	Jersey Review (also 4/19/22)
4/16	4/15	WAAU	Philadelphia, PA	H. C. Kuser
4/28	4/18	WBAC	Des Moines, IA	Kiwanas Club (2 days, also for 2 days starting 4/28/23)
5/13	5/5	WCAI	Topeka, KS	American Legion
5/--	5/31	WEAL	Des Moines, IA	Mystic Shrine, special train "to coast and back"

CALL LETTER POLICIES

One area which has been particularly murky is that of call letter policies. Following the adoption of the "Radio Act of 1912", call signs for most non-amateur services were composed of three letters.(16) Because most early commercial land stations were clustered along the coast, the original policy for land stations was that those on the Pacific coast were normally assigned calls starting with K, while calls starting with W were normally assigned to outlets along the Great Lakes and the Atlantic and Pacific coasts.(17)

With the development of inland services, further refinements were required. As land stations, broadcasters have generally followed the "K's in the West, W's in the East" standard. However, two different East-West dividing lines have been used. Originally the boundary ran along the eastern borders of Montana, Wyoming, Colorado, and New Mexico. It was only in late January, 1923 that the line was shifted to the current standard of the Mississippi River.

The rapid expansion of the ship service during World War One required utilization of four-letter calls for ship stations, including, in alphabetical order, calls from the KE--, KI--, KO--, KU--, and, starting June, 1920, KD-- blocks. (Land stations continued to generally receive three-letter calls.) The assignment of the conspicuous call KDKA to the pioneer East Pittsburgh broadcaster has been viewed as evidence of some sort of special status. However, review of the RADIO SERVICE BULLETIN shows what actually occurred was more mundane. For some reason, during the period of June, 1920 through April, 1921 most commercial land stations received calls from the four letter ship blocks, and by nothing more significant than coincidence KDKA was the only broadcaster to be born in this period.(18)

The policy of three-letter calls for land stations was restored after this lapse, until the flood of broadcasting grants required that the broadcasting service switch to four-letter calls, with Western broadcasting stations sharing the KD--, and later KF-- and KG-- blocks with ship stations, while Eastern broadcasters were assigned calls from the W-A-, and later W-B-, blocks. Some stations

received calls outside these blocks due to special requests, and eventually individual call requests became the norm.

Call letter "combinations which, for various reasons, international, national, local, or individual may be objectionable" (19) were avoided. Accordingly, in this period it was apparently decided that "WDAM" might be considered objectionable, as Commerce records show that the assignment of this particular call to a Western Electric Company station in New York City was changed after ten days, with the call WEAJ substituted. (This station is now WNBC.)

CRITIQUE OF PERIOD SOURCES

While preparing the chronological list of station activity some idiosyncracies of three traditional sources of licensing information became apparent. The best generally available source of information for the early twenties is the RADIO SERVICE BULLETIN, issued by the Bureau of Navigation, which reported monthly the changes, deletions, and new station grants made during the preceding month. Three important characteristics of the Bulletin have sometimes been overlooked. The first is that its station lists do not report chronologically the grants within a given month, as the Bulletin lists always used non-chronological formats, such as alphabetically by city of license or call sign. Second, a few stations entered the broadcasting service classification by metamorphosis from another service category, so their debuts are recorded in the "alterations and corrections" lists, rather than the new station lists which herald the appearance of more conventional entrants to the service. This alternate route was used by three stations in the period through May, 1922: KQV, Pittsburgh, Pennsylvania; KDPT, San Diego, California; and WRR, Dallas, Texas. Third, broadcasting station additions, changes, and deletions were not reported in a separate category until the July 1, 1922 issue. Prior to this date they were intermixed with the other classes of "commercial land stations", so care must be taken in extracting broadcast service information.

The Bulletin was not completely free from occasional typographical errors--for example, in the January 2, 1922 issue both KJB, Everett, Washington and KFL, Seattle, Washington are incorrectly listed as being broadcast grants, and one station, WGI (later WARC), Medford Hillside, Massachusetts, seems to have disappeared without benefit of official notification. However, overall there were only a few minor discrepancies between information contained in the Bulletin, and that found in government records.

Another source of licensing information proved somewhat more suspect. W. E. Downey, Supervisor of Radio at the Department of Commerce, appears to have regularly provided monthly totals of broadcasting station additions, deletions, and outstanding authorizations.(20) As seen in the listing below there are a number of discrepancies, for the period through May, 1922, between the monthly figures reported by Downey, and the information contained in Commerce records and the RADIO SERVICE BULLETIN.(21)

Month	W.E Downey Figures				Research Figures			
	New	Deleted	Increase	Total	New	Deleted	Increase	Total
1921								
Sept	3	..	3	3	4*	..	4	4
Oct	1	..	1	4	3	..	3	7
Nov	1	..	1	5	2**	..	2	9
Dec	23	..	23	28	20	.	20	29
1922								
Jan	8	..	8	36	9	..	9	38
Feb	24	..	24	60	23	..	23	61
Mar	77	..	77	137	79	2	77	138
Apr	76	..	76	213	83	..	83	221
May	97	..	97	310	96	5	91	312

* includes WJZ ** includes KDKA

The most troubling feature about the Downey figures is the complete absence of deletions. In fact, Downey reports no deletions until September of 1922. However, review of the Commerce records and the RADIO SERVICE BULLETIN clearly shows that fifteen stations were deleted prior to September, beginning with two in March. Since the Downey figures do not list specific stations, the cause of the differences is not readily apparent.

Finally, the new station totals appearing in Gleason Archer's HISTORY OF RADIO TO 1926 (22) have a readily identifiable flaw. Archer's figures are inflated, because they are actually the number of new "commercial land stations" reported monthly by the RADIO SERVICE BULLETIN. As noted earlier, this means the figures erroneously include many non-broadcast service grants, and also omit a few transfers to the broadcast service that were reported in the change lists.

BROADCAST SERVICE ACTIVITY LIST

Presented at the close is a chronological list of broadcasting service activity for all non-temporary stations from October, 1920 to the close of May, 1922.

Most of the actions are new station grants. The information for new grants is organized according to the headers appearing at the top of each page. The additions are listed by their initial broadcasting service authorization date--normally the date of the first broadcast service license. "LIC" refers to the standard case where the first broadcast authorization was the licensing of a new station. "TRN" denotes stations whose first broadcast license was a transfer from a non-broadcast service classification, using the same call sign. "REL" refers to the relicensing of a previously deleted broadcast station. In a few cases an authorization to broadcast was made before the first license was issued. Initial authorizations by telephone and telegraph are denoted "TP" and "TG" respectively. "STA" stands for a "Special Temporary Authorization", while "AUT" appears for one station where the records merely list it as "authorized".

Included with the initial authorization date is the call sign, city of license, and station owner, plus frequency assigned. "E" stands for the entertainment wavelength of 360 meters (833 KiloHertz), and "M" denotes the market and weather wavelength of 485 meters (618 kiloHertz).

The next column covers the call letter assignment information, which as noted earlier was a part of the application process, and took place prior to the issuance of an operating authorization. The three entries here are the date of the call assignment, the form of the request, and the origin of the request. In most cases the standard procedure was followed, with the application process begun with the receipt of a Form 761 from a regional Radio Inspector. The nine radio inspection districts were headquartered in the following locations:

1. Boston, Massachusetts
2. New York, New York
3. Baltimore, Maryland
4. Savannah, Georgia
5. New Orleans, Louisiana
6. San Francisco, California
7. Seattle, Washington
8. Detroit, Michigan
9. Chicago, Illinois

In addition, a few of the Form 761s came via Norfolk, Virginia.

Most exceptions to the standard procedure occurred when the station owners ("OWN") dealt directly with Washington, via telephone ("TP"), telegraph ("TG"), letter ("LET"), or call letter reservation ("RES"). In one case W. E. Downey ("WED") was listed as the person involved in making the call assignment.

The next column notes the date of the first broadcast service license and the duration of that initial license. The final "status" column lists the eventual fate of the station--either its deletion date (with call sign if different from the original) or status as of September 1, 1987.

H40-S-4
When only the month of an action is known, usually reflecting data derived from the RADIO SERVICE BULLETIN, two dashes appear for the day the action took place. A "(?)" marks a "best guess" required because of incomplete or ambiguous information, which in most cases should not be more than a few days off. As might be expected, some errors, both in the original records and during the research process, must be assumed to have crept in. However, extensive cross-referencing of original records and other source material should insure that errors have been minimized. Moreover, it is certain that these 319 grants comprise the complete roster of non-temporary broadcasting authorizations issued during this period.

The one entry which must be viewed with due caution is that of current status. Unlike human beings, which have clearly defined births, lives, and deaths, these stations sometimes had very complicated histories, complete with resurrections, call sign and ownership changes, consolidations of two or more stations under a single call, and facility exchanges. Review of the station histories in EDUCATION'S OWN STATIONS will give a good idea of the tumultuous histories some of these stations enjoyed. This caveat notwithstanding, the status information was included to provide a feel for the outcome of these stations as a class, even though a few station histories are really too tangled to allow refinement to a single entry. One general standard for status column entries was that, in case of doubt, the nod was given to interpretations which provide continuity and longevity. In particular, stations which were deleted but then immediately relicensed were treated as having a single unbroken lifespan, so deletion dates are those where the final unreversed deletion took place, and stations still active might have been deleted and relicensed somewhere along the way.

SUMMARY

The information presented will hopefully provide a more complete understanding of the policies of the period, and permit more detailed analysis of the development of the broadcast service. For instance, the chronological list of new broadcast station grants clearly shows the abrupt shift from the slow initial expansion of the service though November of 1921, with the grand total of nine grants dominated by northeastern and midwestern radio equipment firms, to the popular expansion that began in December of 1921, when owners of all kinds sponsored stations. In fact, this popularization has every appearance of a rapidly spreading West Coast fad, as fully sixteen of the twenty-two grants made from December, 1921 to January 4, 1922 were for West Coast facilities.

NOTES ON SOURCES

The original card files for broadcasting stations, maintained by the Commerce Department, comprised the basic source of station information through the period up to the March, 1927 assumption of regulatory authority by the Federal Radio Commission. [NOTE: A major component of the Commerce files used for this research no longer exists. The nature of the Ownership card files, which held licensee and license date data, was apparently misunderstood, and according to FCC employee Mary McDonald these files were declared in August, 1987 to be "no longer needed" and destroyed]. Information from that point forward is included in the Federal Communications Commission station card files. Both sets of cards are currently available through the Mass Media Bureau of the Federal Communications Commission, and as of September, 1987 obtainable from the Public Reference Room located on the second floor of 1919 M Street, Northwest, Washington, D. C.

Information from the basic resources was double-checked against a number of sources, the most important being the grant, deletion, and cumulative station lists appearing in the RADIO SERVICE BULLETIN, the original station licenses and 761 Forms archived at the Washington National Records Center in Suitland, Maryland, and an undated "List of First Stations Licensed for Broadcasting" (through March, 1922, with a few omissions), which was prepared by FCC personnel, but had no additional identification, and was obtained through the Broadcast Pioneers Library in Washington, D. C.

NOTES:

- (1) Gleason L. Archer, HISTORY OF RADIO TO 1926, (New York, NY, American Historical Society, 1938), p. 215-216
- (2) United States Department of Commerce, Bureau of Navigation, "Amendments to Regulations", RADIO SERVICE BULLETIN (No. 57), January 3, 1922, (Washington, DC, Government Printing Office, 1922), p. 10
- (3) Gleason L. Archer, HISTORY OF RADIO TO 1926, (New York, NY, American Historical Society, 1938), p. 203, 208, 217
- (4) Eric Barnouw, A HISTORY OF BROADCASTING IN THE UNITED STATES, volume 1, A Tower in Babel (New York, Oxford University Press, 1966), p. 69
- (5) KDKA and WJZ did not receive broadcasting service licenses until November 7, 1921 and September 30, 1921 respectively. However, these two stations are considered for the purposes of this review to mark the start of the broadcast service, and unless otherwise noted are listed according to their initial 360 meter grants.
- (6) S. E. Frost, EDUCATION'S OWN STATIONS, (Chicago, IL, University of Chicago Press, 1937), p. 246
- (7) "The Radio Act of 1927", section 9, and the "Communications Act of 1934", section 307(a)
- (8) Eric Barnouw, A HISTORY OF BROADCASTING IN THE UNITED STATES, volume 1, A Tower in Babel (New York, Oxford University Press, 1966), p. 95
- (9) The United States was divided into nine Radio Inspection Districts, with the region's Radio Inspector headquartered at a major port of each district. United States Department of Commerce, Bureau of Navigation, "Radio Broadcasting", RADIO SERVICE BULLETIN (No. 60), April 1, 1922, (Washington, DC, Government Printing Office, 1922), p. 23
- (10) Form 761 instructions; United States Department of Commerce, Bureau of Navigation, "Radio Broadcasting", RADIO SERVICE BULLETIN (No. 60), April 1, 1922, (Washington, DC, Government Printing Office, 1922), p. 23; C. Joseph Pusateri, ENTERPRISE IN RADIO: WWL AND THE BUSINESS OF BROADCASTING, (Washington, DC, University Press of America, Inc., 1980), p. 18-19, 24-25
- (11) United States Department of Commerce, Bureau of Navigation, "Land Station Licenses", RADIO SERVICE BULLETIN (No. 61), May 1, 1922, (Washington, DC, Government Printing Office, 1922), p. 15
- (12) The initial license for WDT, Ship Owner's Radio Service in New York, NY, was for only ten days, as there was concern that the station might cause interference.
- (13) A number of station files refer to a letter from the Radio Inspector as the impetus for deletion.
- (14) The Radio Corporation of America's temporary grant for WJY, Hoboken, New Jersey, used to report the Dempsey-Carpentier prize fight on July 2, 1921, is not considered in this review to be part of the broadcasting service, as it transmitted on the longwave wavelength of 1600 meters (187 kilohertz).
- (15) The five review are: Bancroft School, Haddonfield, NJ (WRAQ); Gardenville High School, Gardenville, NY (WGHS); Gettysburg College, Gettysburg, PA (WDBG); Milton College, Milton, WI (WSAM); and Northern State Normal School, Marquette, MI, (WBI).
- (16) Government stations received calls starting with N, and until October, 1928, when W and K prefixes were added, amateur and special land stations had calls composed of the district number followed by two or three letters.

(17) United States Department of Commerce, Bureau of Navigation, RADIO STATIONS OF THE UNITED STATES, July 1, 1914, (Washington, DC, Government Printing Office, 1914), p. 6

(18) Two non-broadcast service stations first licensed during this period, KDPM, Cleveland, OH, and KDPT, San Diego, CA, later transferred to the broadcast service. Both were eventually deleted.

(19) United States Department of Commerce, Bureau of Navigation, RADIO STATIONS OF THE UNITED STATES, July 1, 1914, (Washington, DC, Government Printing Office, 1914), p. 8

(20) Hiram L. Jome, ECONOMICS OF THE RADIO INDUSTRY, (Chicago, A. V. Shaw Company, 1925), p. 78 (through August, 1924), and "The Broadcast Hotel is Overcrowded", Radio in the Home, April, 1925, (H. M. Neely Publishing Company, Philadelphia, PA, 1925), p. 28 (through February 12, 1925)

(21) The research information is based on the list of broadcast service activity appearing at the close. This information agrees fully with that appearing in the RADIO SERVICE BULLETIN, with the exception of three stations--KFI, KOJ, and WBAZ--listed by the Bulletin as being April grants. These stations are recorded in Commerce files with license dates of March 31st for KFI, and May 1st for KOJ and WBAZ.

(22) Gleason L. Archer, HISTORY OF RADIO TO 1926, (New York, NY, American Historical Society, 1938), p. 241 (Monthly grant totals for August, 1921 to May, 1922)

Thomas sent a list of the first 300 or so station authorizations, which goes on for several pages. Rather than printing the whole thing, we're only listing the first three "pages". If you want the whole list, send \$1.00 plus a big SASE with 73¢ postage. bp

Addr list Auth Call Location	Call Asgn First Lic
Type Owner	Freq Type Loc Duration Status 9/1/87
1 10/27/20 KDKA East Pittsburgh, PA	10/27/20 11/07/21 KDKA-1020 Pittsburgh, PA
LIC Westinghouse Elec & Mfg Co	761 DET 1YR
2 05/--/21 WJZ Newark, NJ	--/--/-- 09/30/21 WABC-770 New York, NY
LIC Westinghouse Elec & Mfg Co	761 DET 1YR
3 09/15/21 WBZ Springfield, MA	--/--/-- 09/15/22 WBZ-1030 Boston, MA
LIC Westinghouse Elec & Mfg Co	761 DET 3M
4 09/19/21 WDF Roselle Park, NJ	09/19/21 09/19/21 DEL 02/20/23
LIC Radio Corporation of America	761 NYC 3M
5 09/29/21 WJZ New Haven, CT	09/29/21 09/29/21 DEL 12/01/22
LIC A. C. Gilbert Company	761 BOS 1YR
6 10/13/21 KOL Los Angeles, CA	--/--/-- 10/13/21 DEL 06/09/22
LIC Arno A. Kluge	761 SF 1YR
7 10/13/21 WBL Detroit, MI	10/06/21 10/13/21 WMO-950 Detroit, MI
LIC Detroit News	761 DET 1YR
8 10/13/21 WKX New York, NY	10/05/21 10/13/21 DEL 06/--/24
LIC De Forest Radio Teleg & Teleg	761 NYC ---
9 11/09/21 KYW Chicago, IL	11/09/21 11/15/21 KYW-1060 Philadelphia, PA
77P Westinghouse Elec & Mfg Co	761 CHI 1YR
10 12/07/21 KMG Stockton, CA	12/07/21 12/07/21 KMG-1230 Stockton, CA
LIC Portable Wireless Telephone Co	761 SF 1YR
11 12/08/21 KDN San Francisco, CA	12/03/21 12/08/21 DEL 05/01/23
LIC Leo J. Heyberg Company	761 SF 1YR
12 12/08/21 KFC Seattle, WA	12/03/21 12/08/21 DEL 01/23/23
LIC Northern Radio & Elec Company	761 SEA 1YR
13 12/08/21 KGB San Francisco, CA	--/--/-- 12/08/21 DEL 03/23/22
LIC Edwin L. Lorden	761 SF 1YR
14 12/08/21 KGC Hollywood, CA	--/--/-- 12/08/21 KNY-1070 Los Angeles, CA
LIC Electric Lighting Supply Co	761 SF 1YR
15 12/08/21 NJB Washington, DC	12/03/21 12/08/21 DEL 03/26/24
LIC White & Boyer Company	761 BAL 1YR
16 12/09/21 KOW San Jose, CA	12/07/21 12/09/21 KCBS-740 San Francisco, CA
LIC Charles D. Herrold	761 SF 1YR
17 12/09/21 KVO Sacramento, CA	12/07/21 12/09/21 DEL 01/02/23
LIC J. C. Mohrrecht	761 SF 1YR
18 12/09/21 KYJ Los Angeles, CA	12/07/21 12/09/21 DEL 05/01/23
LIC Leo J. Heyberg Company	761 SF 1YR

Addr list Auth Call Location	Call Asgn First Lic
Type Owner	Freq Type Loc Duration Status 9/1/87
19 12/09/21 KXC Los Angeles, CA	12/07/21 12/09/21 DEL 03/09/23 (KOG)
LIC Western Radio Electric Company	761 SF 1YR
20 12/09/21 KZM Oakland, CA	12/07/21 12/09/21 DEL 06/23/31
LIC Preston D. Allen	761 SF 1YR
21 12/09/21 KZY Oakland, CA	12/07/21 12/09/21 DEL 01/24/23
LIC Atlantic-Pacific Radio Suppl	761 SF 1YR
22 12/20/21 KJJ Sunnyvale, CA	12/16/21 12/20/21 DEL 06/16/23
LIC The Radio Shop	761 SF 1YR
23 12/20/21 KJO Stockton, CA	12/16/21 12/20/21 DEL 04/--/25 (?)
LIC C. O. Gould	761 SF 1YR
24 12/20/21 KYY San Francisco, CA	12/16/21 12/20/21 DEL 01/24/23
LIC The Radio Telephone Shop	761 SF 1YR
25 12/22/21 WDM Washington, DC	12/22/21 12/22/21 DEL 06/08/25
LIC Church of the Covenant	761 BAL 30D
26 12/22/21 WOT New York, NY	12/22/21 12/22/21 DEL 12/28/23
LIC Ship Owners Radio Service	761 NYC 10D
27 12/22/21 WOM Washington, DC	12/22/21 12/22/21 DEL 05/--/22
LIC Radio Construction & Elec Co	761 --- 30D
28 12/29/21 WOU Omaha, NE	12/29/21 12/29/21 DEL 06/23/23
LIC R. B. Howell	761 --- 1YR
29 12/29/21 WHH Cincinnati, OH	12/29/21 12/30/21 DEL 12/11/23
LIC Precision Equipment Company	761 DET 1YR
30 J. J. Dunn & Company, CA	01/03/22 01/04/22 DEL 04/25/23
LIC J. J. Dunn & Company	761 SF 1YR
31 01/04/22 KLP Los Altos, CA	01/03/22 01/04/22 DEL 03/09/23
LIC Colin B. Kennedy Company	761 SF 1YR
32 01/09/22 KQV Pittsburgh, PA	--/--/-- 01/09/22 KQV-1410 Pittsburgh, PA
TRN Doubleday-Hill Electric Co	761 --- 6M
33 01/10/22 WFB Pittsburgh, PA	01/10/22 01/10/22 DEL 05/05/22
LIC Newspaper Printing Company	761 --- 6M
34 01/13/22 WHA Madison, WI	--/--/-- 01/13/22 WHA-970 Madison, WI
LIC University of Wisconsin	761 --- 6M
35 01/13/22 WLB Minneapolis, MN	--/--/-- 01/13/22 KUON-770 Minneapolis, MN
LIC University of Minnesota	761 --- 6M
36 01/18/22 WMO Jersey City, NJ	01/18/22 01/18/22 DEL 03/--/23 (?)
LIC Wireless Telephone-Hudson Cnty	761 NYC 6M

Addr list Auth Call Location	Call Asgn First Lic
Type Owner	Freq Type Loc Duration Status 9/1/87
37 01/26/22 WQZ Toledo, OH	--/--/-- 01/26/22 DEL 01/02/23 (WBAZ)
LIC Marshall-Gerken Company	EM --- 3M
38 01/26/22 WKX Indianapolis, IN	01/18/22 01/26/22 DEL 06/01/23
LIC Hamilton Manufacturing Company	761 CHI 3M
02/02/22 Change KXC [19] Los Angeles, CA	CALL: KOG
39 02/03/22 WGH Montgomery, AL	02/01/22 02/03/22 DEL 06/05/22
LIC Montgomery Light & Power Co	761 NO 3M
40 02/04/22 WGY Schenectady, NY	02/03/22 02/04/22 WGY-810 Schenectady, NY
LIC General Electric Company	761 NYC 3M
41 02/07/22 WGI Medford Hillside, MA	02/01/22 02/07/22 DEL 04/--/27 (?)
LIC American Radio Research Corp	761 BOS 3M
42 02/08/22 KGF Pomona, CA	02/01/22 02/08/22 DEL 12/06/22
LIC Pomona Fixture & Wiring Co	761 SF 3M
43 02/08/22 WGI Philadelphia, PA	02/01/22 02/08/22 DEL 12/31/24
LIC Thomas F. J. Howlett	761 BAL 3M
44 02/13/22 KUO San Francisco, CA	02/14/22 02/13/22 DEL 01/21/26
LIC Examiner Printing Company	761 SF 30D
45 02/16/22 WOK Pine Bluff, AR	02/15/22 02/16/22 DEL 06/--/24
LIC Pine Bluff Company	E ASN --- 3M
46 02/16/22 WQZ Richmond, IN	02/16/22 02/16/22 DEL 04/09/23
LIC Palladium Printing Company	EM LET ONN 3M
47 02/17/22 WOO Kansas City, MO	02/16/22 02/17/22 DEL 06/14/34
LIC Western Radio Company	761 CHI 3M
48 02/18/22 WOC Rock Island, IL	02/18/22 02/18/22 WOC-1420 Davenport, IA
LIC Karlowa Radio Company	761 --- 3M
49 02/20/22 WOH Indianapolis, IN	02/18/22 02/20/22 DEL 02/14/23
LIC Hatfield Electric Company	761 CHI 3M
50 02/20/22 WOR Newark, NJ	02/17/22 02/20/22 WOR-710 New York, NY
LIC L. Bamberger & Company	761 NYC 3M
51 02/21/22 WBU Chicago, IL	02/09/22 02/21/22 DEL 11/07/23
LIC City of Chicago	761 CHI 3M
52 02/21/22 WHK Cleveland, OH	02/20/22 02/21/22 WHK-1420 Cleveland, OH
LIC Warren R. Cox	761 DET 3M
53 02/23/22 WOS Jefferson City, MO	02/20/22 02/23/22 DEL 03/27/36
LIC Missouri State Marketing Bur	761 CHI 3M