

# G26-3-1 FREQUENCY ASSIGNMENTS

by Bill Hardy

You have heard that changes are planned for our AM broadcast band in North America.

Among them are expanding the AM band to 1705 kHz (and adding one channel at 530 kHz), changing the spacing between channels from 10 kHz to 9 kHz, and authorizing more stations on the "clear" channels. In fact, some of these proposals are already in the process of being implemented.

A good place to begin your understanding of the impact of these changes is this summary of the way stations are currently assigned to AM frequencies.

## How It Started

When KDKA in Pittsburgh broadcast the results of the Harding-Cox election in 1920, radio allocations were very simple: There was only one frequency, and no two stations in the same area would be able to use it simultaneously. But as the first crude transmitters gave way to more refined gear, stations found that they could avoid interference by transmitting on different frequencies. Unfortunately, power increases from 5 watts to 1000 watts or more, usually brought severe interference hundreds or thousands of miles away at night. Eventually, Congress created the forerunner of our present-day Federal Communications Commission (FCC), to assign stations to specific frequencies and to keep them from interfering with stations on the same channel and on adjacent channels. Thus, AM "allocations" were born.

Eventually, certain high power stations (usually 50,000 watts) were given exclusive nighttime use of frequencies called "clear channels." About 40 were assigned to U.S. stations, and through arrangements with Canada, about six were set aside for Canadian use. Still other channels were intended for mid-power "regional" use, and six were established as "local" channels with many low-power stations on each.

Mexico wasn't assigned any clear channels of its own at first, so some Mexican stations (especially some shady high-power border stations owned by U.S. interests) created terrific interference by using high power between the U.S. frequencies. The signals accomplished their purpose -- they got out over substantial distances at night -- but at the expense of tremendous interference to the adjoining stations. So in 1941, the North American Regional Broadcasting Agreement -- NARBA -- was entered into by the U.S., Canada, Cuba, and other countries. The AM band (550 to 1500 kHz back then) was expanded down to 540 and up to 1600. Of the eleven new frequencies created, Mexico got six and shared a seventh (540) with Canada. As it turned out, Mexico later chose to enter into its own treaty with the U.S. and ignore some terms of the NARBA, but the current U.S.-Mexican Agreement still uses the NARBA frequency assignments for Mexico and the U.S.

In other words, the NARBA treaty, the U.S.-Mexican Agreement, and this country's FCC Rules and Regulations all spell out the same definitions for "clear," "regional," and "local" channels, and the various classes of stations on each. The following information comes from those sources.

## Classes of Channels

The AM broadcast band in North America, 540 to 1600 kHz, is divided into 107 channels of 10 kHz each. These 107 channels, in turn, are divided by FCC regulation and international treaty into three classifications. There are 60 clear channels, 41 regional channels, and 6 local channels.

• **Clear channels.** By FCC definition, "a clear channel is one on which the dominant station or stations render service over wide areas, and which are cleared of objectionable interference within their primary service areas and over all or a substantial part of their secondary service areas."

The following frequencies are defined as clear channels:

540	990 to 1140
640 to 780	1160 to 1220
800 to 900	1500 to 1580
940	

As we shall explain shortly, some of these clear channels are reserved for virtually-exclusive nighttime use in one or two countries, while other clear channels allow a greater number of fulltime operations. Thus, some of

these channels are "clearer" than others.

• **Regional channels.** The FCC says that stations on regional channels "render service primarily to a principal center of population and the rural area contiguous thereto." The following frequencies are defined as regional channels:

550 to 630	1250 to 1330
790	1350 to 1390
910 to 930	1410 to 1440
950 to 980	1460 to 1480
1150	1590 to 1600

• **Local channels.** These are the six channels known to DXers as the "graveyard" channels, although the terms "local channels" or "Class IV Channels" (more on that in a moment) are used in the broadcast industry. The FCC says that the stations on local channels "render service primarily to a city or town and the suburban and rural areas contiguous thereto." The following six frequencies are defined as local channels:

1230	1340	1450
1240	1400	1490

## Classes of Stations

Besides defining the frequencies, the FCC and international treaties have also chosen to define the stations operating on them.

• **Class I stations.** The FCC definition: "A dominant station operating on a clear channel and designed to render primary and secondary service over an extended area and at relatively long distances."

There are two sub-classes of Class I stations.

• **Class I-A.** Until 1980, these stations were unduplicated on their channel at night, or benefitted from a limit of one or two other nighttime operations on that channel; plus, they receive nighttime protection from other countries. In its 1980 rulemaking, the FCC decided to allow additional nighttime stations on the U.S. channels assigned to I-A stations, provided the I-A station was protected to a distance of some 750 miles. There are also Class I-A stations in Canada, Mexico, and the Bahamas.

• **Class I-B.** These stations are on "duplicated" clear channels. Most share the frequency with one or two other Class I-B stations in the U.S., Canada, Mexico, or Cuba. In addition, nighttime stations are permitted provided they protect all the Class I stations on the frequency.

Class I-A stations in the U.S. use 50kw power. Some Mexican I-A stations have used as much as 250kw. Canadian and Bahamian I-A outlets range from 10kw to 50kw power. Class I-B stations range from 10kw to 50kw.

"Primary service" means groundwave, which is essentially the daytime coverage area of a station. "Secondary service" means skywave, which is more commonly known as "skip" to hobbyists such as hams, CBers, and us DXers. It is worth noting that while all AM stations are protected from interference within their primary (groundwave) coverage areas, only the Class I stations are also protected from nighttime interference within the secondary (skywave) coverage areas they reach at night.

• **Class II stations.** Quite simply, any station operating on a "clear channel" that is not a Class I station, is a Class II station. Power levels range from 250 watts to 50kw. Thus, not every 50kw station is Class I. Some stations using 50kw at night might get out well, but unless they are Class I, their skywave coverage area is not protected from nighttime interference! Also, any daytime station on a clear channel is Class II.

• **Class III stations.** Stations with power levels from 500 to 5000 watts on the regional channels. All but a dozen or so stations on regional channels are Class III. Some are daytime, and some are fulltime. (Those few stations using 250 watts or 100 watts power on regional channels are actually Class IV. They were assigned there decades ago, and the FCC did not see fit to find a different frequency for them.)

• **Class IV stations.** All stations operating on the six "local channels" (graveyard channels, to us DXers) are Class IV stations. Power limit is 1000 watts day, 250 watts night; minimum power is 250 watts (except for a few stragglers still using 100 watts). These stations do not have to use directional antennas at night, so these six frequencies are a jumble of many stations fading in and out, if you live more than 20 miles from a station on the channel. In fact, virtually all Class IV stations do use 250 watts nondirectional at night. And the majority use the full 1000 watts daytime. Since they can use 250 watts nighttime, there are no daytime Class IV stations. They are ineligible for Presunrise Service Authority.

Perhaps the following chart will put these assignments into perspective:

Clear channels: Class I-A, Class I-B, Class II  
 Regional channels: Class III (a few Class IV)  
 Local channels: Class IV

Class I Assignments

Obviously, Class I-A or Class I-B is a very desirable assignment for a radio station. Most Class I-A stations are non-directional and can be heard clearly on simple radios at night for a distance of 750 miles or more, in all directions. Class I-B stations usually have to use directional antennas away from each other, but have nighttime coverage rivaling the Class I-A's. In fact, many Class I-B stations use 50kw nondirectional during the daytime, switching to directional at night.

Class II stations, however, have to keep their nighttime signals away from all the Class I stations on the frequency. If they can't accomplish this by reducing power or changing antenna pattern, or both, they must leave the air at sunset. Those Class II daytime stations located within the nighttime skywave "skip" coverage area of the Class I station will never be able to operate at night unless they can move to a different frequency. And to add insult to injury, if the Class I station happens to interfere with the Class II station, the latter has no recourse! So it's a tough life!

As we mentioned, 50kw power is no proof that a station is Class I-A or Class I-B. So we hope you will find the following itemization of Class I stations helpful. Class I-A stations are in the left column, while the Class I-B stations are to the right. NABBA provides for some shared "I-A and I-B" channels, but most are either I-A or I-B. There is only one frequency with two I-A stations: 540 kHz. The I-A frequencies are commonly known as "U.S. clears," "Canadian clears," or "Mexican clears," depending on which country has the I-A assignment. The others are usually called the "I-B clears" and are often full of nighttime stations away from the I-B's.

Class I-A Assignments

Class I-B Assignments

540 CBK Regina, Sask., Canada	
XEWA San Luis Potosi, Mexico	
640 KFI Los Angeles, Calif.	CBN St. John's, Nfld., Canada
650 WSM Nashville, Tenn.	
660 WNBC New York, N.Y.	
670 WMAQ Chicago, Ill.	KNBR San Francisco, Calif.
680	XETRA Tijuana, Mexico
690 CBP Montreal, Que., Canada	
700 WLW Cincinnati, Ohio	WOR New York, N.Y.
710	KIRO Seattle, Wash.
720 WGN Chicago, Ill.	
730 XEX Mexico City, Mexico	
740 CBL Toronto, Ont., Canada	
750 WSB Atlanta, Ga.	
760 WJR Detroit, Mich.	
770 WABC New York, N.Y.	
780 WBBM Chicago, Ill.	
800 XEROK Ciudad Juarez, Mexico	
810	KGO San Francisco, Calif.
	WGY Schenectady, N.Y.
820 WBAP Fort Worth-Dallas, Texas	
830 WCCO Minneapolis-St. Paul, Minn.	
840 WHAS Louisville, Ky.	
850	KOA Denver, Colo.
	XETQ Orizaba, Mexico
860 CJBC Toronto, Ont., Canada	
870 WWL New Orleans, La.	
880 WCBS New York, N.Y.	
890 WLS Chicago, Ill.	
900 XEW Mexico City, Mexico	
940	CBM Montreal, Que., Canada
	XEQ Mexico City, Mexico
990 CBW Winnipeg, Man., Canada	
1000	WCFL Chicago, Ill.
	KOMO Seattle, Wash.
	XEOY Mexico City, Mexico
1010 CBR Calgary, Alta., Canada	CMBF Habana, Cuba (presently operates on 950 kHz)
1020 KDKA Pittsburgh, Pa.	

Class I-A Assignments

Class I-B Assignments

1030 WBZ Boston, Mass.	
1040 WHO Des Moines, Iowa	
1050 XEG Monterrey, Mexico	
1060	KYW Philadelphia, Pa.
	XEEP Mexico City, Mexico
1070	KNX Los Angeles, Calif.
	CBA Moncton, N.B., Canada
1080	WTIC Hartford, Conn.
	KRLD Dallas, Texas
1090	KAAY Little Rock, Ark.
	WBAL Baltimore, Md.
	XEPRS Rosarito, Mexico
1100 WWWE Cleveland, Ohio	
1110	KFAB Omaha, Neb.
	WBT Charlotte, N.C.
1120 KMOX St. Louis, Mo.	
1130	KWKH Shreveport, La.
	WNEW New York, N.Y.
	CKWX Vancouver, B.C., Canada
1140	WAVA Richmond, Va.
	XEMR Monterrey, Mexico
1160 KSL Salt Lake City, Utah	
1170	KVOO Tulsa, Okla.
	WWVA Wheeling, W. Va.
1180 WHAM Rochester, N.Y.	
1190	WOWO Fort Wayne, Ind.
	KEX Portland, Ore.
	XEWK Guadalajara, Mexico
1200 WOAI San Antonio, Texas	
1210 WCAU Philadelphia, Pa.	
1220 XEB Mexico City, Mexico	
1500	WTOP Washington, D.C.
	KSTP St. Paul-Minneapolis, Minn.
1510	WLAC Nashville, Tenn.
	KGA Spokane, Wash.
1520	WKBW Buffalo, N.Y.
	KOMA Oklahoma City, Okla.
1530	KFBK Sacramento, Calif.
	WCKY Cincinnati, Ohio
1540 ZNS-1 Nassau, Bahamas	KXEL Waterloo, Iowa
1550	CBE Windsor, Ont., Canada
	XEXB (no location given; possibly now deleted)
1560	KPMC Bakersfield, Calif.
	WQXR New York, N.Y.
	CMZ (no location given; possibly now deleted)
1570 XERF Ciudad Acuña, Mexico	
1580 CBJ Chicoutimi, Que., Canada	

Special thanks to Matthew Shugart for unearthing this listing, which is the most official and most complete listing of I-A and I-B stations we have seen to date!

Operating Hours of U.S. Stations

The FCC has five categories of operating hours for U.S. stations, although most are in the first two categories here.

- Unlimited time. The station may operate at any hour, day or night (with its proper daytime, nighttime, or presunrise facilities as outlined in its license). Also called "fulltime" by many in the broadcast industry. May operate 24 hours per day if desired.
- Daytime. Must not operate before local sunrise or past local sunset. (For Presunrise Service Authority, see G9 .) Sunrise and sunset times are specified in the license for each month. See pages 10 to 41.
- Specified Hours. The operating hours are specified in the license. This may be for economic reasons (to avoid the requirement to operate till 10pm six days a week), or it may be for technical reasons.
- Share Time. Two or more stations divide the broadcast week on the same frequency in a local area. Sometimes they share a transmitter.
- Limited Time. 14 still exist, and the FCC hopes they will change to "unlimited time."

Every AM station in the U.S. is in one of those five categories!

## Formats Of Clear Channel Stations

Stations using high power on clear channels can be heard for hundreds or even thousands of miles at night. Established DXers generally don't regard such nightly receptions as "real DX," and as a result, these stations are not generally reported to the DX sections of hobby publications such as IRCA's "DX Monitor." However, one man's "interference" is another man's DX! Some of the Class I-B stations located at opposite ends of the country are a genuine DX thrill when they're finally logged after years of trying.

To give everyone a quick reference to the formats of these high-power stations, John Clemmer, Bill Hardy, and Greg Monti compiled the following listing of formats for the Class I-A and Class I-B stations widely heard in North America. Some other widely-heard (regionally) stations with powers of 10kw or more are also listed. "Pop" is popular music (sometimes known as "adult contemporary," a format between top 40 rock and middle-of-the-road). "MOR" is middle-of-the-road. (LK) is a station with Larry King all night.

540 CBK--SK	CBC, variety	1100 WWWE-OH	Pop
640 KFI--CA	Top 40, pop	1110 KFAB-NE	MOR, pop
650 WSM--TN	Country	WBT--NC	Pop
660 WNBC-NY	Top 40, pop	1120 KMOX-MO	Info/news, MOR, sports
670 WMAQ-IL	Country-pop blend	KPNW-OR	Pop, MOR (LK)
680 KNBR-CA	Pop	1130 KWKH-LA	Country
690 CBF--QU	French CBC, variety	WNEW-NY	MOR, big bands
XETRA-Mex	Top 40 rock	CKWX-BC	Country
700 WLM--OH	Pop	1140 WRVA-VA	MOR, talk, country
710 WOR--NY	Talk, MOR	KRAK-CA	Country
KIRO-WA	News/talk, some MOR	1160 KSL--UT	MOR, info
720 WGN--IL	Talk, MOR	1170 KVOO-OK	Country
KDWN-NV	Big bands, MOR	WWVA-WV	Country
740 CBL--ON	CBC, variety	1180 KOFI-MT	Pop (LK)
750 WSB--GA	Pop, talk, sports (LK)	WHAM-NY	MOR, pop
760 WJR--MI	MOR, talk	1190 WOWO-IN	Pop
770 KOB--NM	Pop (country all night)	1200 WOAI-TX	Pop, talk, sports (LK)
WABC-NY	Top 40 (moving to pop?)	1210 KGYN-OK	Country
780 WBBM-IL	All news	WCAU-PA	News/talk
KCRL-NV	Classical, beautiful	1220 WGAH-OH	Pop
800 CKLW-ON	Pop	1500 WTOP-DC	News/talk (LK)
XEROK-Mex	Country (some Spanish)	KSTP-MN	Pop, top 40 (LK)
810 KGO--CA	News/talk	1510 WLAC-TN	Pop (soul/Gospel nites)
WGY--NY	MOR, pop, talk	KGA--WA	Country
820 WBAP-TX	Country	1520 WKBW-NY	Top 40
830 WCCO-MN	MOR	KOMA-OK	Country (yes!)
840 WHAS-KY	Pop, MOR	1530 KFBK-CA	News, talk (LK)
850 KOA--CO	News, MOR/pop, sports	WCKY-OH	Beautiful music
860 CJBC-ON	French CBC, variety	1540 KXEL-IA	Country
870 WWL--LA	News/info/some MOR days (country all night)	1550 WOKJ-MS	Black soul, Gospel
880 KRVN-NE	Country	CBE--ON	CBC, variety
WCBS-NY	All news	1560 KPMC-CA	MOR, sports, grab-bag
890 WLS--IL	Top 40	WQXR-NY	Classical music
940 KFRE-CA	Pop	1570 XERF-Mex	Religion, Gospel
CBM--QU	English CBC, variety	1580 CBJ--QU	French CBC, variety
990 CBW--MI	CBC, variety	*****	
1000 KOMO-WA	MOR/info	<u>ALL-NIGHT TRUCKER SHOWS</u>	
WCFL-IL	(change pending) (LK)	10-4, good buddy! These widely-heard	
1020 KTNQ-CA	Spanish music	stations run country music, weather	
KDKA-PA	Pop, talk	and road info, after midnight:	
1030 WBZ--MA	Pop, talk	650 WSM--TN	1040 WHO--IA
KTWO-WY	Pop/MOR (country AN)	670 WMAQ-IL	1080 KNLD-TX
1040 WHO--IA	MOR, country	770 KOB--NM	1140 KRAK-CA
1050 XEG-Mex	Religion, Gospel	820 WBAP-TX	WRVA-VA
1060 KYW--PA	All news	870 WWL--LA	1170 WWVA-WV
1070 KNX--CA	All news	1030 KTWO-WY	1510 KGA--WA
CBA--NB	CBC, variety		
1080 WTIC-CT	MOR, talk		
KRLD-TX	News, MOR, country		
1090 KAAY-AR	Top 40 pop		
WBAL-MD	MOR, talk		
XEPRS-Mex	Religion, record offers		

So if you hear lots of ads for truck stops and nationwide weather and road reports, you just might be tuned to one of these.