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Office of the Secretary
Federal Communications Commission
The Portals
445 12th Street, S.W.
Washington, DC 20554

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Dear Sir or Madam:

This letter transmits an original and ten copies of reply comments with reference to the Commission's Notice of Proposed Rule Making, Low Power FM Radio Service (99-25). An electronic copy of this document was submitted via the Electronic Comment Filing System (ECFS) on September 1, 1999.

Since the Commission did not provide timely notice of the extension of the reply comment period to ECFS users, I reserve the right to further extend or revise these reply comments.

Yours truly,

Kenneth W. Bowles

Kenneth W. Bowles

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	MM Docket No. 99-25
Creation of a Low Power FM Radio Service	)	RM-9208 RM-9242

REPLY COMMENTS OF
KENNETH W. BOWLES

A summary of my reply comments may be found near the conclusion of this document. The summary includes an indication of where discussion of each reply comment can be found.

The Commission's Notice of Proposed Rule Making (NPRM) seeks comments on the creation of a Low Power FM (LPFM) Radio Service. I am taking this opportunity to reply to the selected comments of others.

My broadcasting career has included being Station Manager of KMFA-AM (a carrier current station at the Missouri School of Mines) and KMSM-FM (a 10-watt station licensed to the University of Missouri) in the 1960's. More recently I have been General Manager of KGNV-FM (a 1,000-watt station in Washington, MO), KGNN-AM (a 5,000-watt station in Cuba, MO), and KGNN-FM (a 6,000-watt station in Cuba, MO). I have a bachelor's degree in electrical engineering and masters and doctorate degrees in theology. I have done graduate work in engineering administration and have been employed in that capacity by McDonnell Aircraft Company (now Boeing). I am currently General Manager of Flat Foot Media, Inc., and Midwest Christian Media, Inc. I am a member of the Society of Broadcast Engineering and National Religious Broadcasting (through Flat Foot Media, Inc.); however, my comments are my own and not the comments of these organizations.

Since January 1999 I have studied perhaps 100 markets for the potential placement of LPFM radio stations.

My replies have generally been limited to comments made by those providing significant inputs concerning the interference issues and those from religious broadcasters.

I encourage the Commission to immediately create noncommercial LP1000 radio stations that provide co-channel, first adjacent channel, and second adjacent channel protection. The stations would essentially have the same responsibilities and privileges as current Full Power Stations. *My replies to the comments of others are based on such a LPFM Radio Service.*

Comments of Those Providing Engineering Studies

Several organizations have provided engineering studies including the National Association of Broadcasters (NAB), the Federal Communications Commission (FCC), USA Digital Radio, Inc. (USADR), the Consumer Electronics Manufacturers Association (CEMA), and the National Lawyers Guild Committee on Democratic Communications (NLG).

NAB, who represents many existing stations, proclaimed its position against LPFM and then went about doing engineering studies. The same can be said of NLG except they began with a pro-LPFM presupposition. CEMA is the trade association of the consumer electronics industry and is protecting the industry's interests. CEMA's work was accomplished with the support of National Public Radio and the Corporation for Public Broadcasting. Both organizations are strongly opposed to LPFM. USADR is concerned about protecting its emerging IBOC DAR technology. The FCC's work seems to be neutral.

Study of Digital Interference

USADR is one of the developers of IBOC DAB technology.

In its comments and reply comments, USADR requests that the Commission not create the LPFM service until IBOC field testing is complete. However, **there are no indications in USADR's comments, its reply comments, nor in the attached engineering statement by Moffet, Larson & Johnson, Inc., anticipating any negative influences to IBOC DAR from the elimination of third adjacent channel interference protection.**

Some of USADR's caution is based on a single Full Power station being surrounded by numbers of LP1000 which would never occur (e.g., Engineering Report, pp. 5-6).

Realizing that there is a huge grassroots understanding that LPFM is in the public interest, **IBOC DAR creators must be required to make room for LPFM as they develop their technology**. My rough estimate is that LPFM support is running more than 80% in the 1,500 plus comments and reply comments which have so far been filed.

Studies of Analog Interference

Federal Communications Commission

The Commission associates who prepared the study are very reserved in their comments. They have restricted themselves to observed data. The Commission tested all types of radios except small, inexpensive receivers with integral antenna.

The study concludes that the samples ". . . exceed the 40 dB third adjacent channel protection criterion by a substantial margin. For the third adjacent channel, that margin was similar for most of the receivers at the noise limited desired signal level and at the 60 dBu contour. As one would expect there are substantially greater U/D ratios for third adjacent channel interference, because of the frequency separation and the receiver selectivity. Overall, there appears to be approximately 10 dB better interference performance at the third adjacent channel than at the second (p. 28)."

My interpretation of this conclusion is that **reduction of third adjacent channel interference protection can be tolerated** in the types of radios tested.

The National Lawyers Guild Committee on Democratic Communications

NLG's study was conducted by Broadcast Signal Lab (BSL) of Cambridge, MA. The study also deals with just the facts. It tested all types of radios including those that were inexpensive.

The BSL associates observe, "First, car radios and higher priced radios performed far better than one would predict based on the FCC interference ratios. Substantial signal strengths

were required to cause 2nd, 3rd, and 4th adjacent channel interference. Second, performance of lower priced radios tended to 'straddle' the FCC ratio reference levels (see the Executive Summary)."

My interpretation of BSL's conclusions is that **all radios except some lower priced ones will tolerate a large amount of additional third adjacent channel interference.**

NLG's study also considered the fourth adjacent channel. "Between the choices of second, third, and fourth adjacent undesired signals for a given radio under test, one cannot readily predict which will least affect the radio (p. 12)."

This conclusion is important in that it indicates that **the removal of third adjacent channel protection would not cause any more interference than the removal of fourth adjacent channel protection.** No station presently operates with planned fourth adjacent channel protection. There is no serious move within the radio broadcast community to require fourth adjacent channel protection because of an undesired level of interference.

> "The National Association of Broadcasters has consistently used buzzwords like interference to scare the American public and hide their opposition to increasing the number of voices available over the airwaves" said Alan Korn, an attorney with the National Lawyers Guild Committee for Democratic Communications. "Our study shows that opening the airwaves to the public with LPFM will cause far less interference than that caused by existing full power stations. These results confirm that the only interference the NAB is really concerned with is interference with their monopoly over the radio dial." From a recent NLG news release.

National Association of Broadcasters

Volume Two of NAB's comments corresponds to the FCC and NLG studies. The NAB testing was accomplished by Carl T. Jones Corporation (CTJ). Moffet, Larson, & Johnson, Inc. (MLJ) analyzed the test results.

CTJ's major task was to prove the FCC wrong when it stated early in the proceedings that FM receivers have improved over the years since the FM interference standards were adopted. CTJ concludes, "The interference ratios measured in the NAB's receiver test program show that the interference susceptibility of contemporary receivers has generally not improved since the rules were adopted in the 1940's. This is true for the second and third-adjacent channel cases where the Commission is considering ignoring potential interference caused by proposed LPFM stations (p. 16)."

If CTJ's conclusions are correct, it is shocking that FM receivers have not improved in a space of 60 years!

CTJ does say, "Available sales data indicate that the receivers most susceptible to second and third adjacent channel interference comprise the majority of receivers in the hands of the public. These classes of receivers, clock, personal and portable-style radios, are more susceptible than the overall population to second and third adjacent channel interference, but are a large proportion (approximately 65 percent) of the FM receiver population (p. 17)."

First, if inexpensive receivers have not incorporated new technology in 60 years, the FCC needs to immediately assert its authority to specify improved performance in its receiver certification process. Improved public service through LPFM should not be held captive to outdated receiver technology. Since receivers will have to be replaced in the conversion to digital, now is the appropriate time to mandate improved analog performance in the expected

new, hybrid receivers. The new LPFM and IBOC DAB opportunities will entice consumers to buy the new receivers.

Second, I own perhaps a dozen radios. I only use two extensively. Many listeners only use their car radio extensively. Studies of this type should be based on receivers used, not receivers sold.

However, CTJ used a median receiver of *all* the receivers tested--not a median receiver of the receivers *most used*. Listenership is greatest during the morning drive time. This period is so named because of the large number of persons who listen to their car radios while driving to work. CTJ should have used a median heavily weighted with tested automobile radios. Indeed, the more inexpensive radios, which degraded the results of CTJ's analysis, are more often thought of as novelty radios used in unique circumstances where less performance is acceptable by the public. For example, they are used while jogging down a trail and while snoozing between the alarm and getting out of bed. I would propose that clock radios are normally bought to awaken a person and that any significant period of listening to them while awake is very small.

Table 1

Third Adjacent Channel Interference Ratios (dB)

Received Power

Median	**FCC**	**-65 dBm**	**-55 dBm**	**-45 dBm**
Of *all* Radios*	-40	-39.7	-32.0	-26.8
Of *auto* Radios**	-40	-42.9	-50.5	-50.6

*From p. 10, MFJ
** From p. 26, CTJ

The table indicates that the median performance of auto radios, based on NAB data, allows for increased interference in the third adjacent channel. It also shows that sufficient technology is available to upgrade non-automobile radios.

Consumer Electronics Manufacturers Association

The laboratory test report provided by the Consumer Electronics Manufacturers Association was in a format that is incompatible to the Electronic Comment Filing System (ECFS) and is not available to electronic readers. However, CEMA comments report to provide a second hand indication of the study.

On page 9, CEMA only provides information for sales in 1998 and page 10 only lists factory-installed radios for 1997. On page 10, CEMA says, "We can further assume that the entire population of in-use receivers corresponds roughly to the annual sales categories." **We are being asked to believe that accurate conclusions concerning the number of listeners subjected to interference can be based only on the sales of the most recent year for which sales data is available and that radio usage is directly proportional to sales!**

This is a significant assumption with no survey provided to support it. I have eleven radios in my house and one in my car. Only one of the eleven home radios gets any significant use. My most recent purchase, a walk man bought in 1998, has been used once in the last six months and then it was only used for a period of two hours. My most used radio, is perhaps ten years or older in age. I do not believe that radio usage and the newness of radios are directly proportional. In fact I would contend that the most used radios are bought first and rarely used

novelty radios are bought later. I would also contend that the most used radios are the ones most immune from third adjacent channel interference.

On page 12, CEMA uses 1997 testing to conclude that LPFM stations should not be permitted because they may provide unacceptable first adjacent channel interference to IBOC DAR systems. However, it is our understanding that 1997 IBOC DAR technology is now out of date and that the new systems are currently under field test (see USADR above). **CEMA relies on IBOC DAR testing which is out of date.**

On page 13, **CEMA provides no indication that LPFM third adjacent channel interference will provide any problem to IBOC DAR.**

Comparing the Four Analog Studies

It is difficult to compare the three studies. Different methods were used. The NAB study does not provide a key associating sample numbers with their specific identity. The CEMA study is not available to ECFS users.

Very generally, the FCC and NLG studies find room for increased third adjacent channel interference. The NAB and CEMA studies do not. NLG, CEMA, and NAB are protagonists but the FCC is a non-belligerent. The question needs to be answered, **"Do the NAB and CEMA studies use methodology which over-emphasize interference problems?"**

Analog Interference Potential

Volume III of the NAB comments includes a study of the interference potential for 60 selected markets. The first set of associated maps shows data associated with the median values of the receivers examined in the categories of Home Stereo, Clock/Personal, and Portable. The second set is associated with the worst case radio.

Results are provided in tables and in maps. The maps were not provided to the FCC in a format usable by ECFS and thus are impossible to read. The tables indicate fantastic numbers of population experiencing interference. However, there are problems with the procedure used to develop the tables and maps.

I will use LP1000 stations in St. Louis as an example because it is the market about which I am most informed.

1. St. Louis is listed in the table of cities between 200,000 and 500,000 population. However, the St. Louis market is number 18 with a population of 2,095,800 in its MSA.

2. The procedure uses NAB receiver data that shows a much lower threshold for interference than does the FCC and NLG data. In Point 5, below, I use the FCC ratios because the FCC and NLG studies show current FCC specifications are conservative for the most used radios.

3. Two or more of the LP1000 stations seem to be placed in the middle of the Mississippi River. This is hard to determine because of the poor quality of the maps.

4. When I run the FCC software for St. Louis, it lists a clump of three adjacent channels and another clump of two adjacent channels that will probably only support two stations, not five, since stations in each clump would probably interfere with each other.

5. The NAB study only protects the co-channels and the first adjacent channels. My proposal is that only LP1000 stations be authorized. They would protect co-channels and first and second adjacent channels. This would reduce the interference because there would be fewer LPFM stations and because there would be second adjacent channel interference protection. The number of channels would be reduced from twelve to four. However, the four channels include a clump of two that would only produce one station. So the total available stations would really be three.

6. The NAB study speaks of "Population Experiencing Interference . . . (pp. 14-19)" instead of "Listeners Experiencing Interference." For example, the superficial reader assumes 40,716 persons will hear interference in St. Louis using FCC ratios (p. 15). However, this is not true. The entire population of an interfered area would not be listening to interfered stations.

   - Assume that 30% of the population is actually listening to radio.

   - Assume that the number of interfering LP1000 stations is reduced from 12 to 3 because only third adjacent channel interference protection is being reduced. This is in accordance with my proposal.

   - Assume that only 2% of the total radio listeners monitor each interfered station. This would correspond roughly to a median Arbitron rating.

   - Assume two stations are being interfered by each LP1000 station. One would be on each side of a LP1000 station.

   There would only be 122 persons attempting to listen to interfered stations (40,716 X 0.50 X 0.25 X 0.02 X 2 = 122). These listeners would be spread over six interfered stations. **So, each interfered station would only have 20, not 40,716, interfered listeners!** Many of these interfered listeners will be listening by automobile radio and would soon travel out of the area of interference.

   Even if NAB's inflated numbers are used for St. Louis in Table 5 (p. 15), Clock/Personal would be reduced to 50 listeners per interfered station (not 99,264); Portable, 95 (not 189,569); Home Stereo, 33 (not 66,482).

7. In reality, a large portion of listeners would be using automobile radios. NAB has excluded automobile radios from this study.

8. The NLG study has shown that the effects of the reduction of third adjacent channel interference protection are similar to the effects of the reduction of fourth adjacent channel interference. The FCC does not currently provide protection from fourth adjacent channel interference and there is no validation in the real world that spectrum has been subjected to the degree of interference anarchy suggested by NAB.

9. The one attempting to review Volume III is hampered by a description of the method used that is not sufficient and by maps that can not be read.

Analog Interference to LPFM Stations

Figures 1 and 2 of NAB's Volume 1 (pp. 21, 23) show interference which LPFM stations would receive from a Class B Full Power station. However, NAB has proposed unrealistic circumstances:

1. LP100 stations are shown rather than LP1000 stations. LP1000 stations, because of their higher power, would withstand more interference.
2. No LPFM candidate would apply for a LP100 station this close to a Class B station. A more realistic circumstance would be LP1000 stations located perhaps an average 15 km from second/third adjacent channel Full Power interferers. Further separation would reduce interference.
3. The figures use a Class B station rather than a Class B1, C3, A, or D station. The other classes of stations would produce less interference because they produce less power.
4. The mean receiver is used instead of the most used receiver. This has artificially lowered the tolerance of receivers to interference.
5. Receiver data was used which is out of line with the FCC and NLG testing. This has also artificially lowered the tolerance of receivers to interference.

Conclusion

NAB is opposed to LPFM and may have spun its arguments by using methodology, selected results, and presentation methods to place LPFM in an unrealistic, poor light. FCC and NLG studies show that increased interference on third adjacent channels can be tolerated. The USADR study does not anticipate any problem to IBOC DAR when third adjacent channel protection is reduced. **LP1000 stations providing co-channel and first and second channel interference protection will not adversely affect existing stations.**

Additional Comments of National Association of Broadcasters

Commercial LPFM

In the body of the comments (p. 71-2, 78 ff.), NAB considers the Telecommunications Act of 1996 to have application to commercial LPFM stations. If NAB is correct, **the Commission should specify that all LPFM station be noncommercial.** Otherwise, one of the purposes of the proposed service, to promote new ownership, would be thwarted. Existing commercial owners, with superior finances, would outbid new owners.

Pirate Operators

NAB is correct that **persons associated with pirate radio stations should be banned from LPFM stations** (pp. 74-5).

Independent Radio Voices in Radio Markets

In this section of the NAB comments (Volume 1, Attachment A), NAB develops an odd argument that LPFM stations should not be permitted because 71.2% of all commercial stations in the 268 Arbitron metro areas are not standalone—and this is good! I think **the stronger argument would be LPFM stations should be authorized because 71.2% of all commercial stations are not standalone.**

Standalone stations should be in the majority if the public interest needs of each city, each county, each church, and each school district in the coverage area is to be respected.

Where is the in-depth coverage of county commissions and city counsels? Where are the broadcasts of high school and college sports? Where are the prime time treatments of local issues? Many stations are not broadcasting local and state news. Some do not even broadcast national news. Some are satellite feeds with hardly any local segments beside station identifications and commercials. If there are any treatments of issues they come from a national commentator who cannot normally speak to local issues or they are scheduled during times of low listenership like Sunday mornings.

Many of the commercial stations have distant owners who have no personal participation in the various communities of their far flung stations. The interest of group owners is diluted by the need to supervise multiple stations. There is no pressure on regional broadcasters to fulfill the needs for local broadcasting.

It would have been helpful if NAB had used a statistical analysis of actual stations to support the opinions of this section. The study could have determined what significant public service is being achieved in the various markets and whether or not the level achieved is sufficient. I believe such a study would support the need of LPFM stations.

Format Availability after Consolidation

In Volume I, Attachment B, of NAB's comments, the writers argue that LPFM is not necessary because consolidation has been successful by increasing the number of formats available to potential listeners. However, further on we read, "Nationally, the average number of general formats offered in all 268 Arbitron survey markets increased between the two years, going from 9.7 in Spring 96 to 9.8 in Spring 1997 to 10.0 in Fall 1998 (p. 5)." It turns out that consolidation has only resulted in an average of 0.3 formats being added! Even when NAB investigates specific formats and thus inflates the number of available formats, it is shown that not one format was added (p. 7). **The ineffectiveness of consolidation to significantly increase available formats is a reason to activate LPFM stations.**

My interest is mainly religious broadcasting. The reader is referred below to my reply comments to the National Religious Broadcasters' comments. A need for the expansion of teen and Hispanic formats via LPFM is demonstrated.

The Threat to Consumer Welfare

Miscellaneous Comments

NAB makes mention of the extent of interference caused by proposed LPFM stations. However, their case for interference has probably been overstated as indicated above. They also indicate existing stations will be forced to reduce the quality of their programming due to these technical loses as well as economic loses. There will probably be no economic losses (see "Costs and Benefits" below).

NAB prophesies that existing stations will suffer economically because LPFM stations would inhibit the implementation of IBOC DAR. However, USADR has not indicated in its comments or reply comments that LP1000 stations, providing co-channel and first and second adjacent channel interference protection, will have any negative effect.

NAB states that the diversity of radio programming has been increased under the existing circumstances. But the NAB's own Attachment B indicates that not one single format has been added since consolidation. No significant advantage to the community has been made by consolidation. Rather an old problem has been reinforced, especially in medium and large markets, the absence of local broadcasting.

. The need for local broadcasting is one argument in favor of LPFM. NAB makes a case that smaller markets already have local broadcasting. Therefore, LPFM is not needed. However, **LPFM will bring local broadcasting to medium and large markets where it is needed.** Regional broadcasters do not provide the in depth coverage of local issues which are provided by broadcasters in smaller markets.

NAB complains that if the audience is further divided by LPFM stations, Full Power stations will have to economize on programming costs and the communities to which they broadcast will suffer. What would probably happen should a station loose audience is that management would make programming adjustments to entice the audience back. This is simple **competition that results in better products**. In any case, the community has not suffered. In the fictional case study, components of the community are being better served by a LPFM station.

Costs and Benefits

NAB states LPFM stations cannot produce enough income to produce quality programming. NAB also states that LPFM will injure the survivability of existing stations.

However, information on the income of existing noncommercial low power radio stations is available to the public through the IRS, from the public files of 501(c)(3) organizations, and on the Internet. The income information below for 1997 has been obtained from the Internet Nonprofit Center (www.nonprofits.com) which provides data available to the public from reports made to the IRS.

One has to be careful to find data which represents owners of single stations and which does not include income obtained through sources other than broadcasting. The process is also frustrated by stations that are owned by churches and by entries without an income entry. Churches do not have to make income reports to the IRS.

Using the M Street Journal Radio Directory as a guide, I looked through the Internet Nonprofit Center data for station owners. Seven states (Missouri, Illinois, Tennessee, Arkansas, Kentucky, Louisiana, and Iowa) were checked and data for 24 stations was obtained. Below find the results for the stations found to be licensed for 3,000 watts of power and less. A large city station and a proposed LP1000 large city station are also provided.

The population data is from Zip Find (link-usa.com/zipcode/) and is approximate. It is approximate because the center of the zip code area may not be the same as the antenna site and because the calculation may use the whole population of a zip code area when only part of is serviced by the station.

The radius of the coverage area is provided to Zip Find. The radius was found from RF Specialties Technical Problems Disk, Version 2.47. All the stations listed below are non-directional.

Figure 2

Noncommercial Low Power Income

Owners and Stations	**Income**	**Coverage Radius** (contour)	**Population Covered** (zip code of license)	**Income per Person Covered**
Missouri River Christian	$81,439*	9 miles (60 dBu)	38,842 persons (63090 zip code)	$2.10/person

Broadcasting KGNV-FM Washington, MO 89.9 1,000 watts 65 meters HAAT Acquired 1990				
Good News Ministries** KGNM-AM St. Joseph, MO 1270 1,000 watts day 36 watts night Acquired 1980	$70,181	See Footnote	See Footnote	See Footnote
Olney Voice of Christian Faith WPTH-FM Olney, IL 88.1 720 watts 62 meters HAAT Acquired <1995	$27,810	8 miles (60 dBu)	16,956 persons (63450 zip code)	$1.64/person
Applied Life Ministries KALR-FM Hot Springs, AR 91.5 3,000 watts 148 meters HAAT Acquired <1993	$231,656	18 miles (60 dBu)	115,420 persons (71902 zip code)	$2.01/person
Christian Broadcasting Group of Mountain Home KCMH-FM Mt. Home, AR 91.5 400 watts 128 meters HAAT Acquired <1998	$114,608	10 miles (60 dBu)	32,807 persons (72654 zip code)	$3.49/person
Nashville Public Radio WPLN-FM Nashville, TN 90.3 80,000 watts 345 meters HAAT Acquired <1997	$2,462,412	46 miles (60 dBu)	1,413,573 persons (37201 zip code)	$1.74/person
Proposed LP1000 in a Large City 1,000 watts 60 meters HAAT	$771,387	9 miles	443,326 persons (37201 zip code)	$1.74/person

*The total income is $121,552. However, about 33% of the income is from KGNN-FM Cuba (7,000 watts). This percentage is based on my personal knowledge of being General Manager of the stations.

**Because many variables determine the coverage area of an AM station, coverage and population could not be calculated.

Income per person for stations covering an entire metropolitan area is generally lower then that for stations in rural areas. One reason is because fundraising can be more inefficient in an entire metropolitan area because of the large population density. In a rural area $3.50/person may raise $100,000 but $1.75/person in a large city may raise $800,000. Thus all income sources possible, including underwriting, may be needed in a rural area but a city station may depend just on gifts from listeners.

During the period covered in Figure 2, Missouri River Christian Broadcasting (MRCB) had three full time staff members and several volunteers. One full time person was partly supported by area churches. The stations were primary affiliates of the Moody Broadcasting Network but produced local programming during weekday mornings, Saturday evenings, and Sunday mornings. Extensive locally produced spot announcements were used. Special events were broadcast live. KGNV did an excellent job in providing local programming to its community. This was achieved with about $125,000 of income (including the income from KGNN-FM). A similar, LP1000 station in a large city could generate about $800,000 and its programming would be enhanced correspondingly.

Notice that the existing stations above have all been operating successfully for a number of years.

LP1000 stations would be similar to the existing low power stations and will receive sufficient income to provide programming that will provide important public services beyond what is currently available.

Religious stations receive income mainly from three sources. They are gifts from listeners, gifts from radio ministries, and underwriting. The first two categories are not income sources shared with stations operated by commercial owners. The third category, underwriting, often includes income from organizations that do not advertise on commercial radio or that provide support from their charity accounts.

Noncommercial religious stations have little impact on the income of stations owned by commercial organizations.

Comments of REC Networks

There is currently a pirate radio station on-the-air in my home market. It has been widely publicized as operating on 92.7 MHz, 24-hours per day, 7 days a week. Two weekends ago I listened and its frequency was closer to 92.9 MHz. than 92.7 MHz. Last Saturday its carrier was on the air with no audio. Based on coverage, I suspect that it is a 10-watt station.

I also have a positive experience. From 1963-67, I was on the staff of a licensed 10-watt station at the Missouri School of Mines. Our Chief Engineer, though a student, had a First Class Radiotelephone License and other engineering expertise was available through the University of Missouri System. The appropriate equipment was certified by the Commission. After I graduated and left, a survey showed the small station had more listeners than each of the other four commercial stations in the city of license.

The REC Network study indicates that, under its presuppositions, 3,110 10-watt stations can be placed in the commercial band. Another 18,114 10-watt stations could be placed on high school/community channels. And still another 7,671 stations can be placed in the non-commercial band. Add the numbers in these three categories and places for 28,895 have been discovered.

Because of the limits of available professional broadcasting engineers, I fear that thousands of stations, using uncertified equipment, could be released in the spectrum that will be broadcasting defective signals, off frequency, like the local pirate.

I do not believe there are enough owner-candidates for 28,895 stations. Valuable spectrum will also go unused because larger stations (e.g., LP1000) were sacrificed for huge numbers of unused very low power stations.

The LPFM concept is good, but it should be limited to LP1000 stations utilizing certified equipment and essentially the same technical standards as existing Full Power stations.

Comments of National Religious Broadcasters

NRB is the preeminent organization representing groups and individuals involved in Christian broadcasting. My replies will be critical of NRB's comments. However, I am a member of NRB and hold the organization in high regard.

The NRB comments do not represent the entire membership.

The comments indicate NRB is ". . . a national association of radio and television broadcasters and programmers whose purpose is to foster and encourage the broadcast of religious programming (p. 1). But NRB also includes members who generally support the Commission's NPRM on LPFM.

The Commission should understand that the comments of NRB neither represent the position of its complete membership nor was the membership polled before NRB comments were filed.

NRB is concerned that poor people will loose quality FM service.

NRB argues that the proposed LPFM Radio Service should not be activated because poor people will loose quality FM radio service. However, I argued earlier against the NAB interference potential study by showing that the number of interfered persons listening to each interfered station under my proposal is probably less than twenty. This number gets even smaller as we consider poor persons listening to inexpensive radios.

In reality, poor people may have older and less expensive cars, but much of their listening will still use automobile radios.

- Say 30% of the population are poor persons.
- Say 50% are using their inexpensive radio as opposed to their car radios.
- Say each LP1000 station interferes with two existing stations.

Only six poor persons in St. Louis would loose quality FM radio service from a LP1000 station providing co-channel and first and second adjacent channel interference protection (20 X 0.30 X 0.50 X 2 = 6). Perhaps the LPFM station would buy a new improved radio for each affected poor person.

This is what the NRB could have said about the impact of LPFM on the public interest.

Although NRB is the voice of Christian broadcasters, their comments have brought no input to the discussion that represents their unique position as a parachurch organization fulfilling the unique purposes of the Church (e.g., worship, evangelism, encouraging godly living).

The 1999 NRB Directory of Religious Media (DRM) is the current "bible" concerning the state of religious broadcasting. Religious radio formats are listed on pages 179-189. Yearly statistics are listed in pages 388-395. DRM lists 1,223 full time religious broadcasters.

Religious broadcasting for teens has been neglected and could be accomplished with LPFM.

The impact of Christian broadcasting on teens is microscopic. Music formats either drive teens away or draw them in. The major headings in DRM that would indicate some programming specifically towards teens are Alternative and Hard Rock/Metal. DRM lists thirty stations under Alternative and eight stations under Hard Rock/Metal. These listings may be compared to details about each station in the "Radio Stations" section, pp. 49-140.

When this cross check is made, the following is revealed. There are only 11 stations in the whole nation which broadcast a music format specifically appealing to teens (alternative, alternative/ Christian contemporary, alternative/teaching & preaching, alternative/urban/R&B, Christian contemporary/rock) on a full time basis! The rest of the stations are duplicates, have no detailed listings, or are Christian formatted only part time. Stations broadcasting specifically to teens make up only 0.9% of the full time religious radio stations!

There are no stations broadcasting to teens full time in the top twenty markets!

As of June 1, 1999, the Census Bureau indicated there were around 27,547,400 teenagers in the total United States population of 272,636,000 persons (www.census.gov/population/estimates/nation/intfile2-1.txt). So, teens represent about 10% of the nation's population, but only 0.9% of the nation's religious radio stations broadcast full time to teens.

Christian programming designed for teens meets the Church's goals of worship, evangelism, and the encouragement of godly living. It meets society's more general needs of encouraging teens to practice good character and habits. **LP1000 stations could provide service specifically to teens—a group presently left out of most religious radio but who are especially capable of being influenced to make positive life style changes.**

Religious broadcasting for Hispanics has been neglected and could be accomplished with LPFM.

DRM also lists a "Hispanic" format. Though 59 are listed, only 31 are full time religious Hispanic broadcasters—following the method used above for teens. The rest are part time or outside the United States and its territories. The listed Hispanic stations are spread through only 14 states. Most are in Texas. This is only 2.5% of all full time religious radio stations. When Puerto Rican stations are removed from the total, there are only 25 full time Hispanic stations.

There is only one Hispanic station in a top twenty market.

The Census Bureau lists 31,265,000 Hispanics in the United States population as of June 1, 1999 (www.census.gov/population/estimates/nation/intfile3-1.txt). The corresponding total United States population was 272,636,000 (www.census.gov/population/estimates/nation/intfile2-1.txt). So, Hispanic population makes up about 11% of the total United States population, but

Hispanic religious radio stations only make up 2.5% of the total full time religious radio stations in the United States.

Hispanics have also been neglected in religious broadcasting and this ethnic group will also benefit spiritually and socially by LPFM stations directed to their needs.

Comments of Way-FM

Way-FM owns religious FM stations that broadcast to a youthful demographic, though not specifically to teens. **Way-FM is generally in favor of LPFM.** They specifically believe that ". . . the elimination of the third adjacent channel separations for the LP1000 category would probably not cause any noticeable harm to existing broadcasters . . . (p. 1)."

Grandfathering Translators

Way-FM does request that the Commission grandfather existing noncommercial translators when the LPFM regulations are written. This is a difficult problem.

1. **Protecting existing translators will not have much effect on the number of potential sites for LP1000 stations I have studied.** Remember that I am promoting only LP1000 stations and then only those that protect co-channels and first and second adjacent channels.

2. Religious broadcasters often talk of the "kingdom perspective." When we invoke this perspective we do so by being willing to sacrifice a portion of our own ministry so that some other ministry may make advances beyond what we loose. Our organization may contract but the wide angle result is a larger expansion. In secular language, this would be like sacrificing in order to promote the greater public interests.

   My experience is that low power existing stations will work in markets as small as 20,000 persons. My belief is that local LPFM stations will draw more listeners than a translator covering the same market with the same format. Also there would be more public service because local issues are generally not covered by what are often nation wide translator networks. The "kingdom perspective" is that **LPFM stations proposed in communities of 20,000 persons should have priority over translator stations.** Translators should be secondary services and LP1000 stations should be primary services.

   The primary stations would loose income when they loose translators. But there is the "kingdom perspective."

3. **The loss of translator stations by nation wide translator networks may be made up in part by LPFM stations becoming part of their affiliate networks.** For example, the Moody Broadcasting Network may lose some translator markets but they may gain other markets through new LPFM affiliates.

Freezing Translator Applications

In any case, the Commission should immediately freeze translator construction permits until after founding LPFM stations have received their licenses. Otherwise, the Commission will receive numerous translator applications from applicants hoping to have grandfathered status before the LPFM service is activated. This would reduce the number of LPFM stations.

Ownership of LPFM Stations by Existing Noncommercial Owners

Way-FM also believes that existing non-commercial broadcasters should be allowed some limited ownership of LPFM stations. However, existing owners have greater resources than new owners and will have an advantage in receiving construction permits. One essence of the need of LPFM is new owners. Otherwise, the proposed service will be emasculated and simply be an extension of the current problems.

Way-FM also believes that existing non-commercial broadcasters should be allowed ownership of LPFM stations because they otherwise would not be able to man their operations without outside help. My belief is that the limited number of LP1000 stations I propose would probably be owned and manned by those who have had previous experience in broadcasting.

Way-FM would like to have a part in the proposed LPFM Radio Service. If Way-FM were to provide a network service, no doubt some LPFM station would utilize it. My understanding of the NPRM is that this would be permitted.

The Commission is correct in stating that existing owners should be prohibited from owning LPFM stations.

Comments of Law Offices of James L. Oyster

James Oyster is a well know counsel to religious broadcasters. He has represented organizations with which I have been affiliated. His comments are generally in support of LPFM.

My purpose is to make reply to only one of his themes. Mr. Oyster believes some noncommercial radio stations have advantageous over others because they receive grants from government.

Indeed stations associated with National Public Radio (NPR) often receive grants from the federal government. In some cases they receive grants from state and local governments and receive free facilities and utilities through government institutions.

At the same time, radio stations not supported by the government must compete for the same spectrum. They must pay for new and replacement equipment without the advantage of government grants.

Non-NPR stations are at a disadvantage to NPR stations. For this reason, government supported institutions have had a greater opportunity for their voices to be heard through existing Full Power stations.

The Commission should prohibit organizations that receive government support from holding licenses in the proposed LPFM Radio Service.

I do not support many of Mr. Oyster's comments because of the huge disruption that his proposal would cause within noncommercial broadcasting. Noncommercial stations not receiving government support and not wanting to broadcast commercials would still loose their IRS tax exempt status and have to pay FCC fees.

Comments of the United Church of Christ, et. al. (UCC)

These comments are given in behalf of the United Church of Christ, National Council of the Churches of Christ, the United Methodist Church, the Evangelical Lutheran Church in America, the Civil Rights Forum, Libraries for the Future, and the Consumers Union. They are in favor of a LPFM Radio Service.

My intent is to reply to comments taking up selected themes not previously mentioned in my replies.

Minimum Local Programming Standards

The UCC believes that a programming standard should be imposed which requires at least 50% of the programming be local (p. iv). The UCC offers potential standards that we find faulty.

Having already been involved in broadcasting, I am weary of bookkeeping. I am weary of wrestling with regulations hoping to correctly interpret their convoluted wording. I am weary of finding the Commission has further framed regulations through hard to find letters to violators. I am weary of self-inspection forms that give further twists to understanding the regulations.

I was happy to read in the NPRM that the Commission would not impose local programming standards because LPFM will be locally orientated due to its nature. I think the Commission is correct.

However, if the Commission should decide to adopt local programming standards, let me suggest some items that a standard should accomplish.

- Such a standard should encourage local programming.
- Such a standard should not eliminate local programming that is recorded for later broadcast.
- Such a standard should not eliminate the possibility of releasing a popular program heard on another station at a different time. Another audience could hear it.
- Such a standard should not eliminate local programming produced outside of the LPFM station's studios. For example, a blind person should be able to produce a program using personal equipment at his home with which he is familiar. A church should be able to produce a live or recorded broadcast of its services or of its pastor's devotions. The LPFM station should be able to covers a Veterans Day program from a city park.
- Such a standard should not eliminate procuring a program from a network that is otherwise unheard in the LPFM station's coverage area.
- Such a standard should not eliminate producing a special event from a distance that has local interest. For example, the local wives and families of Promise Keepers need to be able to hear the event their husbands are attending hundreds of miles away. Supporters of a local sports team should be able to hear away games.
- Such a standard should not prohibit the economy of taking a satellite service for overnight hours.

- Recorded music should be considered local programming even though it is not recorded locally. Otherwise, a LPFM station will have to bring in musicians and record music. This would be very expensive and quality would suffer.

- Such a standard should not prohibit the sharing of programming between LPFM stations.

Minimum Operating Hours

The UCC is correct in requesting that the Commission impose minimum operating hours (p. 12) although their standard is too relaxed. The available channels will be in high demand and underused channels should be reassigned as soon as possible. **I suggest that LPFM stations be required to broadcast a minimum of 18 hours per day, 7 days per week, 365 days a year.**

Local Ownership

UCC believes that half of LPFM boards should be local and that owners should be limited to one station. UCC states that ownership of a LPFM station should not be allowed until after a station has been held for five years (p. iv).

If the Commission feels the need, it should require a local programming standard (above) before requiring local ownership. Local programming can be imposed without local ownership.

There are efficiencies in the ownership of multiple stations. Several costs can be shared between several stations. Other costs can be reduced:

- Accounting
- Engineering
- Program Production
- Fund Raising
- Promotion
- Insurance

A single owner should be able to hold licenses for five or more stations and need not be local.

I do not believe the UCC has had enough experience in low power radio station ownership to appreciate the need for efficiencies. Compelling programming cannot be produced by depending entirely on "inexpensive equipment and volunteer labor (p. 14)."

There are several reasons why an ownership needs to be able to be able to transfer control of a station before it has held it five years. Here are a couple of examples:

- As a result of the feeding frenzy accompanying the initial assignment of stations, an ownership in Detroit may find itself with a construction permit for a station in Phoenix. An ownership in Phoenix may be awarded a construction permit for a station in Detroit. The two ownerships may find it useful to exchange stations.

- A group may obtain a construction permit but find it is unable to construct the station. In the process it may have expended funds it needs to have reimbursed. The group needs to be able to sell the construction permit to another organization so it can recoup its expenses. The alternative is that the channel be unused for the remaining term of the construction permit. This would be three years according to the NPRM. Spectrum would be wasted.

- After having operated a station for a period of time an ownership my find itself unsuitable for the responsibility. The ownership needs to be able to sell the station to another and be paid for the expense of putting the station on the air. The alternative is for the channel to go unused for twelve months until the Commission takes its license away for being silent. This is a waste of spectrum.

- If the station has incurred more expenses than it has income, it may need a method to pay its creditors by selling the station. Again the alternative is a waste of spectrum. Furthermore, creditors would go unpaid.

LPFM owners need the early opportunity to sell and otherwise transfer ownership of stations.

LP1000 Stations

The UCC implies that all LP1000 stations should be commercial because more coverage is needed to create viable income for commercial stations than is needed for noncommercial stations (p. 30). Again, this thinking reflects a lack of experience concerning the operation and funding of low power noncommercial FM radio stations.

My experience indicates that the normal income of a noncommercial station is a fraction of that of a commercial station. **A noncommercial LPFM station, even one in a large city, will require 1,000 watts to produce the income needed to provide programming on a par with what listeners are used to receiving.** Smaller stations will provide a service but will be restricted by their lack of income.

Licensee Eligibility

UCC believes that noncommercial licenses should only be awarded to organizations that are tax exempt under the federal tax code (p. 32). I find nothing wrong with this requirement if it means that any not-for-profit entity under state law may apply for a construction permit but that a license would not be awarded until the entity is successful in receiving the federal exemption. This would allow the applicant a period from construction permit award to the award of the license (after construction and program tests) to submit an application for Internal Revenue System (IRS) tax exemption.

Often the incorporation of an organization under state laws is inexpensive and can be done without a lawyer. However, the IRS and lawyers charge hundreds of dollars to do the paperwork that results in a federal exemption. **The FCC should not force organizations incorporated as not-for-profit under state law to spend large amounts of money before they are awarded a construction permit.** Nor should the FCC force such a workload on the IRS. The expenditure can be made after the station is awarded a construction permit.

Allocation of Licenses

UCC believes the license allocation process should discriminate against all potential owners except churches, schools, libraries, and community access organizations (p. 33). The discrimination continues through the UCC's design of a point system that is biased in favor of what essentially has to be predominately music stations staffed by volunteer DJs (p. 35). Furthermore, the UCC requires that the licensee *not* be able to control the content of programs (footnote on p. 35)!

The Commission should not become a coconspirator in the discrimination sought by the UCC. **No not-for-profit organization should be excluded from the allocation process.** This is the United States, not cold war Russia. **Furthermore, the Commission should not disqualify a potential licensee because it does not espouse a politically correct format.** The Commission should not specify the formats. Diversity should be allowed.

The Commission must insist that the licensee be responsible for the content of all programs it broadcasts. Otherwise, the Commission would be licensing radio anarchy.

I think **the Commission should use lotteries to settle mutually exclusive noncommercial applications.** Any point system, because of its very essence, will discriminate unfairly. All applicants should be treated as equals.

Filing Applications

The UCC believes that the number of applications should be maximized by requiring long filing windows. The UCC believes this is necessary to publicize the program (p. 38). However, the historic number of comments filed in this proceeding indicates that the LPFM program already has the widest publicity and that hundreds of persons, maybe thousands, are closely following it. **Short filing windows will assure the service is activated expeditiously and that the burden on the Commission is minimized.**

I recommend the Commission provide frequency search software on its web site for the use of potential applicants. The Commission should take preliminary applications during a filing window of a couple days. Upon the closing of the window, the Commission should immediately make a preliminary award of the channel. A lottery should be used if there are more than one preliminary application for a channel. The successful preliminary application should be posted on the Commission's web site and the successful applicant should be required to file a formal application for construction permit within 60-days. An expedited process should be used to approve construction permits.

Conclusion

The comments of the UCC indicate it is trying to frame the LPFM Radio Service to reflect existing pirate radio. It is significant that the local pirate mentioned earlier resides in a United Methodist Church, part of UCC, et. al.

The LPFM radio service needs to be framed to incorporate diverse formats and ownerships, not just those of lawbreakers. Indeed, owners and operators of pirate stations should be disqualified from the LPFM radio service.

Summary of Reply Comments

- A LPFM radio service should be created (p. 1).
- LPFM stations should exclusively be LP1000 stations (p. 1).

- LPFM stations should be noncommercial (p. 7).
- LPFM stations should provide co-channel and first and second adjacent channel interference protection (pp. 1-7).
- LPFM stations should have essentially the same privileges and technical responsibilities as Full Power stations (pp. 1, 11-12).
- Studies show that most used receivers can tolerate additional third adjacent channel interference (pp. 2-4).
- Increased third adjacent channel interference has no anticipated negative effects on IBOC DAR (pp. 2, 5).
- IBOC DAR proponents must make room for LPFM stations as they create their technology (p. 2).
- Pirate owners and operators should be excluded from LPFM stations (pp. 7, 19).
- LPFM is needed because the number of standalone stations is so small (pp. 7-8).
- LPFM is needed because consolidation has not increased radio formats (p. 8).
- LPFM will bring more local broadcasting to medium and large markets (pp. 8-9).
- Noncommercial LP1000 stations will experience sufficient income to produce programming in the public interest (pp. 9-11).
- Noncommercial LP1000 stations will have little impact on the income of commercial stations (p. 11).
- Creating thousands of 10-watt LPFM stations will waste spectrum because of channel underuse (pp. 11-12).
- Creating thousands of 10-watt LPFM stations will cause significant interference problems due to the lack of broadcast engineers and due to the use of uncertified equipment (pp. 11-12).
- Poor people will not lose quality FM service because of LPRM (p. 12).
- LPFM religious stations can be used to provide service to neglected groups like teenagers and Hispanics (pp. 12-13).
- Existing Full Power religious station owners can sacrifice a minute portion of their ministry so that LPFM ministries can make advances beyond what the Full Power owners will loose (p. 14).
- Translator construction permits should be frozen until after founding LPFM stations receive their licenses (p. 14).
- Owners of Full Power stations should be prohibited from owning LPFM stations (p. 15).
- Organizations receiving government support should be prohibited from owning LPFM stations (p. 15).

- LPFM stations will produce local broadcasting because of their nature. A minimum local programming standard is not needed (p. 16).
- LPFM stations should be required to broadcast a minimum of 18 hours per day, 7 days per week, 365 days a year (p. 17).
- A single owner should be able to hold licenses to five or more stations (p. 17).
- An ownership need not be local since the nature of LPFM stations will foster local broadcasting (p. 16).
- LPFM owners and construction permit holders need an early opportunity to sell and transfer ownership of stations (pp. 17-18).
- A not-for-profit applicant should not be required to file for IRS exemption until after it is preliminarily awarded a channel for a noncommercial station (p. 18).
- No category of not-for-profit organization that can ultimately qualify for an IRS 501(c)(3) exemption should be discriminated against in the allocation process (pp. 18-19).
- Diverse formats should be permitted (pp. 18-19).
- Mutually exclusive noncommercial applications should be settled by lottery (p. 19).
- Short filing windows should be used (p. 19).

Closing Remarks

I appreciate the effort the Commission has made in issuing the LPFM NPRM. I am basically in agreement with the broad outline of the notice. I am looking forward to the Commission's steady progress in achieving the goal of creating the Low Power FM Radio Service.

Thank you for the opportunity to make these reply comments.

Yours truly,

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September 1, 1999

NOTE: An attempt was made to file these reply comments electronically before the end of the working day on September 1, 1999. However, the FCC server was down.