

I am filing these comments on February 27, 1999, on the FCC's Notice of Proposed Rule Making (MMB Docket No. 99-25). I stand in support of the creation of a low-power FM radio broadcasting service. I believe that it could help to diversify a mode of communication that is increasingly dominated by too few owners and too few program formats, and would achieve this without excessive interference with existing FM broadcast services.

Before I address specific issues raised in the NPRM, I would like to explain my reasons for believing that the time for a low-power broadcasting service has come. Ever since Congress relaxed the ownership restrictions, the radio scene has become the home for many large organizations that seem more concerned with expansion than with providing quality programming. This has resulted in a glut of stations formatted purely for sales potential, leaving smaller audiences out in the cold. And though the Commission's policy of letting the market guide format decisions was a sound one before the limits were relaxed, it is now all too easy for a station to ignore its market. Diversity isn't profitable enough for most radio conglomerates. Low-power stations would be better positioned to serve small and niche audiences, chiefly because of their lower operating costs and (presumably) localized management. It is with this objective in mind that I comment on the specific details of the proposal.

I tend to agree that there is not any particular subband within the FM service that would be more suitable for LPFM than any other. For that reason, I support the idea of licensing LPFM stations throughout the existing FM band. I believe that, under some circumstances, low-power AM stations could fit into the existing AM band, and that the potential for nighttime interference could be reduced by specifying different power levels for day and night operation. However, as I am not well schooled in the physics of AM radio, I cannot support this belief.

I also support continuing the reservation of channels 201 through 220 for noncommercial and educational use, and authorizing only noncommercial LPFM stations in this subband. However, I strongly feel that LPFM generally should be open to commercial stations. I personally know of one organization, commercial in nature, that would benefit from possessing an LPFM license, and in turn would benefit the public by filling a serious programming void. Broadly, if LPFM is to provide entry opportunities as contended by the Commission, it must permit commercial operation: if all LPFM stations are noncommercial, it will be very difficult for them to get enough funding to rise into the full-power service. The competition will simply be too intense. Commercial stations serving a diverse range of interests will attract a diverse range of advertisers, especially local businesses otherwise priced out of radio advertising. Therefore, permitting commercial operation will better serve the public interest than would forbidding it. Besides, I am not clear on how noncommercial operation would improve program quality, as alleged by some petitioners. If anything, the lower cost of LPFM station operations could make extraordinarily low-quality service financially possible in either non-commercial or commercial service.

The use of auxiliary frequencies by LPFM licensees should be permitted. No doubt some LPFM stations will require them to provide better service, and some may need to operate studio-to-transmitter links due to zoning constraints, environmental considerations, and so on.

The proposal for LP1000 seems sound, and I support it as proposed. It should be open to both commercial and noncommercial services, with only noncommercial operation authorized for channels 220 and below. Under the right circumstances, an LP1000 station could cover a large enough population to support itself with advertising; this determination should be left up to the individual applicant. However, since many applicants are likely to be too

optimistic in estimating the commercial viability of their proposed stations, I suggest that new commercial LP1000 licenses be issued for a probationary term of 12 to 18 months. This will provide the inexperienced station owner with a good taste of reality before the frequency is permanently assigned. Renewals would be good for the regular license term, as would new noncommercial LP1000 licenses.

The proposed power and antenna height ranges for LP1000 stations seem fair enough; however, I believe the rule should not be absolute. The proposed minimum of 500 watts is reasonable for most circumstances, but there will be cases where 500 watts is too much and 100 watts too little to permit efficient use of the radio spectrum. Therefore, the rule should be waived for LP1000 applicants who demonstrate a compelling public interest in favor of lower power levels. There probably won't be enough such cases to cause a burden on FCC personnel; in addition, the difficulty of demonstrating public interest would be an additional incentive for borderline cases to opt for an LP100 license instead.

LP1000 stations should definitely be afforded primary status, and be required to protect and be protected against harmful interference. The technical information provided in the NPRM suggests that co- and first-adjacent-channel protection should be provided. Some form of second-adjacent-channel protection should also be provided, though considering the low power of the LP1000 service and the current state of FM receiver technology it may be best to require LP1000 stations simply to monitor for interference and take action as necessary. As I understand it, the real concern is with the potential for interference from LP1000 stations. The best protection for second-adjacent stations may be provided by a nominal minimum spacing coupled with the requirement that, for one or two months, new LP1000 stations eliminate any second-adjacent-channel interference of which they are notified. IBOC digital radio is another matter, and until its characteristics are better known I think it would be best not to speculate about its effect on station

spacing requirements. Third-adjacent and IF protection should not be necessary and should not be required of LP1000 licensees. As for translator and booster stations, some degree of protection should be required, and extending the existing protection requirements to LP1000 stations seems the most logical choice. LP1000 stations should not be allowed to operate booster or translator stations, since the local nature proposed for LP1000 has little need for either.

I support the Commission's proposal for LP100 service. The view that a higher power and lower antenna are more economical is legitimate, especially considering the additional space and load-bearing requirements of a high antenna. Lower antennas could be more easily attached to existing buildings and other structures, a major factor in the practicality of urban LP100 stations. The proposed power and antenna limits are reasonable given the envisioned role of LP100 stations. Again, I believe that commercial service should be permitted for this class, but I also believe that the potential for commercial success in this class is limited to a few dense urban areas. Therefore, I again propose that new commercial LP100 licenses be issued for a probationary term of 12 to 18 months, and subsequently renewed for the regular term. Noncommercial licenses would not be subject to this requirement. I realize that most LP100 stations would be noncommercial, but where an applicant believes he or she can succeed as a commercial station, that option should be available.

Operating requirements for LP100 stations should be reduced, as compared to full-power stations. If one of the motivations for the LP100 service is to provide a low-cost broadcast service, it doesn't seem reasonable to apply to it rules that would provide only minimal protection at high cost. Obscenity and the like should be restricted as they currently are, but requiring (for example) a public comment file is unreasonably burdensome and provides no clear public protection. Likewise, service requirements should be

lessened for LP100 stations (see separate comments below).

I agree that secondary status will help LP100 stations better fit into the existing radio infrastructure, but I am concerned that secondary status will permit existing stations to force LP100 stations off the air simply to eliminate competition. Secondary status should not imply a lack of public interest in continued operation. Therefore, if secondary status is granted to LP100 stations, I would urge the Commission to consider carefully the motivations of any full-power station requesting a facility upgrade when it would force one or more LP100 stations off the air. I also believe that LP100 stations should be permitted to accept interference. In urban areas, it will be impossible for an LP100 station to be protected fully from interference. Permitting interference over 10% of the area within the 60 dB contour seems reasonable.

New translators and boosters should be secondary to LP100 stations. As suggested in the NPRM, LP100 stations will originate programming while boosters and translators simply repeat an existing signal. This alone requires that LP100 stations be ranked superior to new boosters and translators, in the interest of promoting diversity of spectrum users. The position that existing boosters and translators should take is a bit trickier. On the one hand, stations owning boosters have invested a significant amount of capital into them; on the other, user diversity requires that existing boosters take a back seat to original programming. I am in favor of according existing boosters and translators equal priority with LP100 stations. The cases where a new station would be better than the existing one, and would deserve superior treatment, are too few to be worth considering at this point. As for boosters and translators for LP100 stations, there really is no point. Let localism prevail.

Turning now to the proposed Microradio class, I believe that the proposal has merit and should be seriously considered. Urban

neighborhoods, for example, would benefit from this class; and especially poorer urban neighborhoods, where a local service would fill the requirement for local news and information.

These stations should be strictly noncommercial. There is no point in opening a commercial 10-watt station with its limited coverage, and in any case the operating costs of such a small station would be so low that even persons of modest means could operate them without commercial revenue. Also, were commercial licenses available, it would be an open invitation for businesses to take all the licenses in a given area and broadcast advertising for themselves 24 hours a day. If we are not to establish an electronic billboard service, we must therefore make Microradio a non-commercial service.

Microradio stations should probably not be required to protect each other from interference. They should be required to operate from a fixed position, and cochannel stations should be separated by a few miles, but the chance of interference is so slight that no other regulation should be required.

The proposed method of interference protection, minimum separation requirements, is well justified by the Commission, but something more is needed if LPFM is to have any chance in major markets. Microradio stations can easily be governed by minimum separation requirements, but for LP100 and, especially, LP1000 stations, it will be difficult to meet these requirements in congested areas. Therefore, I propose that the Commission use a combined approach, similar to that currently used for full-power licensing. This would allow LP1000 and LP100 applicants the choice of using the minimum distance method or the contour protection method. In addition, LPFM applicants who request contour protection should be required to submit a clear map (or some other evidence) showing the protected and interfering contours, and that protection will be achieved. This would be enough of a burden to discourage use of contour protection where not necessary, while permitting its

use where necessary. This method should definitely be adopted for LP1000 applicants, and probably for LP100 applicants too. Microradio applicants should be held to minimum separation requirements only.

The Commission's conclusion that 3rd-adjacent-channel protection is not necessary for the LPFM service seems quite correct. I would only add that most modern receivers seem able to reject 3rd-adjacent interference quite well, and that modern transmitter design ought to eliminate entirely the off-channel emissions protected against by the 3rd-adjacent protection rules. For that reason, I oppose the imposition of third-adjacent-channel protection for LPFM stations, and support the proposal to exempt LPFM stations from third-adjacent-channel protection.

The issue of second-adjacent protection is a little trickier. That the Commission received no interference complaints when "grandfathered" stations were permitted to disregard the second-adjacent protection rule does not mean interference will not result. Still, because the second-adjacent rule will mean fewer LPFM stations, I want to suggest that LPFM applicants be exempt from second-adjacent protection. Modern receivers are generally well designed, and ought to reject second-adjacent interference acceptably. The advent of the phase-locked-loop has allowed precise tuning, together with narrower bandwidths, for both transmitters and receivers. For these reasons, I suggest that LP1000 and LP100 stations be exempt from protecting against second-adjacent channel interference. Alternatively, I suggest that the second-adjacent separation requirement be as short as possible for LP1000 and LP100 stations. Microradio stations, owing to their very low power, should be exempt totally from second- and third-adjacent protection.

On the subject of a tightened spectral mask, I agree that reducing the signal strength through the second-adjacent channel would greatly reduce the potential for interference. I suggest that

a reduction of 10 to 15 dB below the current limits would be sufficient to prevent interference (meaning the signal would have to be attenuated by 45 to 50 dB below the unmodulated carrier level). I think that, though IBOC digital service would likely be unaffected by analog interference, this level of attenuation would further decrease the risk of analog-digital interference.

Decreasing the bandwidth of LPFM stations would work to reduce interference. Narrow-band signals would be received on most modern receivers (except badly designed ones), albeit at reduced volume if the bandwidth was too narrow. However, doing so would greatly limit the operational capabilities of LPFM stations. I believe that LPFM stations ought to be allowed to broadcast in stereo, and narrowing the bandwidth too far would eliminate this ability. Setting new standards for stereo broadcasting in a narrow band, as apparently proposed, is a bad idea: this would require that existing receivers be replaced, and would defeat the purpose of allowing stereo transmission. These factors alone argue against reducing the bandwidth of LPFM signals; in any event, they probably should not be reduced by more than 50 to 75 kHz.

Now we come to the question of ownership restrictions. I cannot put it any other way: ownership restrictions, as described by the NPRM, are a *sine qua non* for LPFM. There is absolutely no point to the LPFM service if existing broadcasters are allowed access to LPFM licenses. Therefore, I support the proposed ownership restrictions. I also support the idea of forbidding cross-ownership of LPFM stations with other mass media outlets, specifically television, newspapers, and cable systems. I do not care much for permitting existing broadcasters to open LPFM stations where they have no other interests; on the other hand, as this could be the only way of funding a new station, I suggest that existing broadcasters be strictly limited in this regard. The Commission plans to impose a nationwide limit of five to ten LPFM

stations per licensee (a plan I agree with), I suggest that full-power broadcasters and other media interests be limited to about half that number. That is, if the limit set is eight, existing media interests should be limited to four.

The problem of getting experienced people into LPFM stations probably isn't as bad as it seems. As I recall, one of the comments in the recent inquiry into the effect of broadened ownership restrictions (Docket #98-35) was that DJs and others in the broadcasting industry were faced with an inability to change employers easily. Increasing the number of broadcasters increases the number of potential employers; additionally, the proximity of management found in a small enterprise may act as an incentive for experienced broadcasters to hire on with LPFM licensees.

I am worried that the Communications Act of 1996 will prohibit the stricter ownership limits described in the NPRM. I agree that the situation of LPFM is much different from that of full-power broadcasting, but whether Congress will agree is a different and critical matter. I suggest, based on my scanty knowledge of the laws, that the Commission could justify tighter ownership limits under its public interest mandate. As the economies of scale are not as great for LPFM stations as for full-power stations, the justification for broad ownership limits is not there; in addition, the entire purpose of LPFM is to broaden diversity of ownership, something that broad ownership restrictions can only hinder. Thus, I say that the Commission should impose its proposed ownership limits.

Naturally, the national limit of five to ten stations supported above is incompatible with a local residency requirement, so I agree that a local residency requirement should not be imposed. The proposal to permit LPFM stations to broadcast network material is good, and I support it, so long as LPFM stations do not simply rebroadcast existing stations (as noted in the NPRM).

As LP1000 stations are nearly full-power, they should be

responsible for upholding the public interest, and so I support the proposal to hold them to the public service requirements. I don't think LP100 and Microradio stations will necessarily serve the public by their very existence, other than by providing alternative programming. However, due to their low size, I am opposed to imposing public service requirements on these two classes for generally the same reasons given by the Commission in its proposal.

No LPFM station should be held liable for the main studio rule as it currently exists, due to the small coverage area of LPFM. If any main studio requirement is to be imposed, it should be one that provides for a main studio within, say, twenty-five miles of the transmitter location. This would permit LPFM stations to comply with the spirit of the main studio rule (that stations must be located in the community they serve if they are truly to serve the community) while simplifying compliance with the proposed environmental protection requirements. LPFM stations should be required to maintain local or toll-free telephone numbers, in any case.

The public file requirement should be applied to LP1000 stations, but not to LP100 or Microradio stations. LP1000 stations are of high enough power and coverage that a public file is warranted to ensure their compliance with the public service requirements. The effort required to keep a public file is not likely that great for an LPFM station, and should not pose a substantial burden. But for LP100 and Microradio licensees, the public file would probably contain only spare copies of the station's license applications, with perhaps one or two letters from the public. This is not worth the effort, in my opinion, and shouldn't be required. In any event, if the purpose of the public file is to ensure that stations serve the public, and if "the very nature of LP100 and microradio stations will ensure that they serve the public," as asserted by the Commission, then what is the purpose of having them maintain a public file?

I support the concept of requiring an annual ownership report from any LPFM station. If this is to be a service composed of diverse voices, it is vital that diversity be protected by the Commission. The only way to do this is to require that the owners of an LPFM broadcaster be disclosed regularly. I would suggest, however, that given the nature of LPFM its annual report form should be simplified. The current Form 323 ownership report seems rather complex, and seems to assume an intimate knowledge of the rules and laws of broadcasting that many LPFM licensees will certainly lack.

I have no objection to extending environmental protection requirements to LP1000 and LP100 licensees. However, I note that the Microradio class is likely not to emit sufficient RF energy to warrant environmental restrictions. According to my copy of the *1995 ARRL Handbook for Radio Amateurs*, at the FM broadcast band the maximum permissible RF energy level for an uncontrolled environment is about 30 volts per meter. By comparison, a discone type antenna radiating 250 watts at 146.5 MHz, placed in the attic, generates an electric field of about 27 volts per meter in the home. The most extreme example listed, that of a whip on an auto roof radiating 100 watts, measured 75 volts per meter at two meters. Since the emitted power is much less than that given in these cases, I don't think RF protection is necessary for Microradio broadcasters.

I have not heard of many full-power FM stations closing overnight, as was once the case. Indeed, management no doubt generally views such a practice as an unnecessary waste of good advertising time. For this reason, I do not believe that LP1000 stations would be inclined to close overnight, or at any other time for that matter, were it not truly necessary (for example, for transmitter maintenance). Still, realizing there are a few mavericks out there, I believe the proposed extension of the operating hours rule to LP1000 stations is justified. LP100 and Microradio licensees, yet again, are another matter. Although I

understand the Commission's point about enforcement, capabilities, and so on, I also think that setting no minimum operation requirement invites abuse of the LPFM license. I note, however, that as a matter of law, silent stations lose their licenses after twelve months (47 USC 312(g)). This need not be enforced directly by the Commission upon LPFM stations; the Commission need only recognize as legitimate applications for frequencies that have sat unused for twelve consecutive months or more. This, in itself, should be sufficient to deter license hoarding, so I believe no operating requirement should be imposed on LP100 and Microradio stations at this time.

I agree that a short construction period for LP100 and Microradio applicants is warranted. My instinct is that Microradio stations could be assembled in a matter of hours, given the right equipment and good conditions, and LP100 stations in a matter of weeks. Twelve- and eighteen-month periods should provide plenty of time to build these stations. I do not think that generally permitting the transfer of Microradio construction permits serves any real purpose, so it should not be allowed. LP100 and LP1000 permits should be transferable, given the size and expense of these stations. As long as construction permits are issued for a specific location only, I see no reason to believe that trafficking or speculation will result. That construction permits are automatically forfeited when they expire seems, to me, to have no effect on the rules for LPFM. The construction permit serves as a guarantee that a frequency will be in use by a certain date, and applicants who cannot guarantee this must yield to those who can.

On the subject of renewals, I agree that the widest diversity of programming can be had by shifting ownership regularly. This is quite appropriate for the Microradio class, where the small coverage area would allow displaced broadcasters to relocate readily. Therefore, I support the issuance of Microradio licenses for a fixed, nonrenewable term. LP100 stations, with their larger

coverage areas and higher construction costs, will likely be more difficult to move between owners. More importantly, the public interest in continued operation of an LP100 station is likely to be greater, owing to the larger coverage. Therefore, I have reservations about making LP100 licenses strictly nonrenewable. In addition, the statute (47 USC 307(a)) provides that the Commission need only grant renewals "if public convenience, interest, or necessity will be served thereby." This is not an impediment to nonrenewable licenses if the public interest is best served by them. This is the case with Microradio. However, LP100 stations would better serve the public if permitted to renew their licenses, so they should and must be permitted to renew their licenses.

LP1000 stations should be required to join the EAS as participating stations, for the reasons noted by the Commission. Likewise, Microradio stations should not (except that they should shut down during national activations). LP100 stations should also not be required to participate formally in the EAS. Their short range and secondary status make them unsuitable for emergency message propagation, and clearly an LP100 station is in no position to serve as a community's or region's chief link to the EAS. Therefore, I propose that LP100 stations, at most, be generally declared non-participating stations for EAS purposes. This would permit emergency messages to be broadcast as widely as possible, while removing LP100 stations from the air and preventing interference during a national emergency. In addition, LP100 stations should be permitted to forgo the use of an EAS encoder, as they would only be broadcasting to their listeners, not other EAS members who would use the encoded information. The corollary to this is that all other stations should be prohibited from monitoring a non-participating LP100 station for EAS transmissions. There should, in addition, be a way for LP100 stations to participate fully in the EAS under certain circumstances, such as where the LP100 station is a community's only local aural service

and is free of interference.

The public doesn't benefit much by having an LPFM station identified as such by its call sign, and as there seems to be a large number of possible call signs available (over 35,000, if my numbers are correct), the use of special call signs cannot really be justified. The only reason to let the public know a station is an LPFM station is so it will understand that, in the case of LP100 and Microradio stations, different rules apply. These rules are not so different that the public must know, from the outset, that it is dealing with an LPFM station. In the cases where it would need to know, the station itself would be in a good position to explain. Therefore, I support the issuance of ordinary call signs to LPFM stations.

Secondary status carries with it the chance of immediate shutdown. This can't really be avoided; it's one of the reasons to place a station into the secondary class. Thus, I support permitting the Commission to close interfering LP100 and Microradio stations immediately.

The proposal to permit only electronic filing of LPFM applications is wise, and I fully support it. The threat of a massive backlog of LPFM applications is enough of a reason in itself to mandate electronic filing. This system would not be incompatible with contour protection if the electronic filing process permitted an application to be submitted pending a contour analysis.

The only problem I foresee is the crush of applications that would certainly occur on the first day for applications, and I note the Commission's concern for this as well. My experience has been that, for web-based events and other high load activities, the Internet has proven horribly unreliable. Therefore, a first-come-first-served process would be extremely harmful and could result in timely applications being rejected simply due to extreme server load. In addition, the crush of applicants would likely act to slow

the Internet as a whole as thousands of would-be licensees jam the FCC server. This is far from the public's best interest. I therefore agree with the proposal to use short filing windows for applications, and I propose that windows be between twenty-four and forty-eight hours wide. This would provide enough time for all applications to be submitted, even allowing for network troubles. The one further suggestion I would make is that the Commission not make LPFM applications depend solely on e-mail. Users applying from a terminal in a library likely will not have an e-mail account from which to apply, and free e-mail services could permit fraud or frivolous use of the system. I suggest, instead, that e-mail be combined with a web-based application system to permit the widest possible range of applicants. If electronic applications are not adopted, I propose a filing window of three to five days.

I doubt very much that auctions are avoidable in the case of LPFM. However, they may not be much of a problem. Applicants for LP1000 stations will probably have the resources to compete effectively in an auction, and many LP100 stations would have ranges short enough to keep the number of mutually exclusive applications low. Microradio stations, if restricted to noncommercial use as I suggest, would not be subject to the auction requirement. Reducing the number of mutually exclusive applications could also be accomplished by short filing windows. One possibility would be to cut filing windows back to three hours long, which would increase network congestion but may cut down on the number of mutually exclusive applications. I do not recommend adopting "letter-perfect" standards of application, considering the experience level of most LPFM applicants. Letter-perfect standards would unreasonably bias the licensing procedure towards experienced applicants, degrading the Commission's stated goal of diversifying the broadcast media.

One additional matter which is not specifically raised in the

NPRM is that of permitting LPFM stations to use directional antennas. I suggest that LP1000 stations be allowed to direct their signals in the same way full-power stations may, but that LP100 and Microradio stations be restricted to omnidirectional antennas. The small coverage area of LP100 and Microradio stations means little benefit could be had by directing the signal, and therefore the additional burden imposed by a directional antenna application serves no great public interest. However, LP1000 stations may be required in some areas to direct their signals for interference protection, or for other reasons. There is a greater public interest in allowing LP1000 stations to direct their signals, and so they should be permitted to do so where necessary. The existing procedures for licensing full-power stations to use directional antennas can be applied to LP1000 stations.

In summary, I enthusiastically support the Commission's proposal to establish three classes of LPFM service. Though there may be difficulties in fitting LPFM stations into the existing broadcast structure, the increased consolidation of media sources mandates something like LPFM to maintain and increase diversity in the broadcast band. This alone is enough to require its institution. If we do not permit low-power broadcasting, we harm the public interest by reserving use of the nation's broadcast spectrum to a few giant companies. And though this is profitable, it doesn't contribute to the free discussion of issues and ideas that the nation holds so dear. Therefore, I say that the nation's best interest requires LPFM, and consequently that the FCC must implement it at once.

Respectfully submitted,

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