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Before the FEDERAL COMMUNICATIONS COMMISSION, Washington DC	)	Comments in response to **RM-9208**
from	)	
Richard Eyre-Eagles	)	Amendment of FCC Rules
REC Networks	)	Part 73, subparts A, B & C.
P O Box 2408	)	
Tempe AZ 85280	)	February 16, 1998

Overview
The Federal Communications Commission ("FCC") is about to make a very important decision in RM-9208. This decision is to change the face of broadcasting in America. This decision will allow anyone who is a U.S. citizen with a good character to be able to license, construct and operate a very low power radio station to serve the public interest.

Personal Background
I am 29 years old. I am a licensed Advanced Class radio amateur (KJ7MU). I have no political or corporate ties or agendas. I have an interest in operating a radio station on a commercial or non-commercial basis. For the past 15 years, I have operated REC Networks ("REC") which comprises of telephone entertainment lines and internet web-sites.

The Proposal In A Nutshell
The proposal before the Commission is to allow Low Power AM ("LPAM") and Low Power FM ("LPFM") stations to operate in the United States. Such stations would be limited to 1 watt of output power.

My Opinion On This Proposal
I support this proposal. This is a proposal which has been a long time coming. In these comments, I will express to the Commission my vision of a LPAM/LPFM (also referred to as "micropower") radio service, some modifications I would like to see to the NPRM and why I feel that LPAM/LPFM would serve the public interest.

True Community Radio
RM-9208 will bring true community radio to America. Radio operated by individuals for individuals. We need to look at reality and the reality does not look good. Radio is becoming less accessible to the general public. This is being shown with automation and sattellite radio formats. What's even worse, the existing Non-Commercial Educational ("NCE"), which were set-up originally as a place to *educate* individuals getting into radio have now closed their doors to private individuals, mostly because if these stations go to a consistent format, they can receive more donations which only go to pay the high priced senior staff of the public radio stations. Don't get me wrong, I am not against *public* radio, but from what I see with the current NCE-FM service, *public radio* has turned into a *private club*. RM-9208 will give the voice back to the people. People who do not have 5 and 6 figure public radio management salaries. People with views that differ from the mainstream news media. People who care. When the Commission approves RM-9208, the Commission is putting an investment in the people of America and that is truely in the public interest.

Bring Radio Back To The Community
The intents of the Rules in Part 73, specifically in FM rules was to give priority in assigning a community it's first FM allotment in order to serve their community. Well, here's what usually happens, a station gets the first allotment in a community, programs to that community for a short period of time then suddenly programs to the major metropolitan area that the community is just outside of. This is not what was intended under the rules and is not in the public interest.

Cable Is No Longer An Option
There was a time when cable-TV companies were operated by individuals and smaller companies. Many cable companies provided access to individuals to operate their own radio stations over the cable (cable-FM) and/or allowed individuals to produce television shows through public access. More and more every day, the cable-TV industry is showing the irresponsibility to the public by eliminating public access and

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cable-FM in favor of services that make more revenue. In my opinion cable no longer serves the public interest.

Community Radio Applications
Some will see pirate stations such as *Free Radio Berkeley* as the prime application of LPAM/LPFM. Although that will be the format of many stations on this new service, we must take into consideration some other applications that can be operated by LPAM/LPFM stations.
Community Information Stations - Such stations can provide information to the citizens and visitors of the serving community by providing information on local attractions and businesses as well as provide emergency information in the events of floods, fires, earthquakes and other natural disasters. In the past, I have consulted with many non-profit organizations who would love to have such a station but becuase they were not a local government entity, they could not qualify for the existing Travelers Information Service.
Minority Community Stations - Stations operated by individuals or groups who live in the specific community where the LPAM/LPFM serves whose interests are not served by any of the metropolitan radio stations. Minority stations can broadcast news and other information specific to that community. Such stations can also broadcast in languages that are not supported by local radio stations.
Neighborhood Stations - Stations operated by individuals to broadcast programs to their neighbors and the surrounding community. Operators of neighborhood stations do not have a political agenda. They just want to provide a commercial or non-commercial radio service to their surrounding area.
Based on all of the different applications that I mentioned, my operations would fall between the Neighborhood and Community Information Station applications.

Comments specifically relating to the petition.
I totally agree with the petitioner's intents for a microbroadcast service. If I am able to obtain such a license, my station would be used for community information and entertainment. I live in an area which is just to the north of the Rio Salado Project, a commerical, industrial and recreational development co-funded by the City of Tempe, Arizona and the U.S. Army Corps of Engineers. My station would also be within one mile of Arizona State University and it's student housing. My station can keep those in this neighborhood up to date with what's going on with the Rio Salado construction as well as provide public affairs programs. I would work with the City of Tempe to get permission to rebroadcast their City Council meetings on a non-commercial basis. Outside of the public affairs programs, our station would be supported by providing local businesses an inexpensive method of advertising their products and services.

The "cell" process discourages diversity.
I do have some differences with the petitioner on the matter of frequency allocations. The petitioner is proposing that stations be licensed in a "cell" and that only one microstation would be allocated per cell. I feel that such a process would eliminate competition and diversity in the class of microstation and would not be in the spirit of the Telecommunications Act.

Micropower AM broadcast stations.
In the AM broadcast band, multiple signals with different programming would not make good engineering sense. Some listeners on the fringe between two stations would receive both programs overlapping each other and if one transmitter is even 10hz off frequency, an annoying heterodyne effect would make either station unlistenable. I feel that every station has the right to be heard as far as they can broadcast with their limited power. In my proposal, I call for microstations to use the extended AM band between 1620 and 1700kHz. The channels 1610 & 1710 kHz have been excluded due to the high number of Travelers Information Stations licensed on 1610 and their future migration to 1710. Microstations proposing operation in the extended-AM band will also need to take into consideration any existing stations as well as any stations approved by the FCC in previous proceedings around eliminating interference in the AM band. If an AM applicant is not able to find a frequency in the 1620-1700kHz range, then an attempt should be made by the applicant to find a channel in the 540-1610kHz band that would not cause interference to any other licensed station, foreign or domestic. AM applicants should also be advised of skywave propagation on certain AM channels in certain markets and nighttime operation on these frequencies may be ineffective. For AM stations, I am suggesting a maximum power level of 5 watts on stations in the band 1620-1700kHz and 1 watt in the band 540-1610kHz.

Micropower FM broadcast stations.

In the FM band, I also have to disagree on the petitioner's request for a single frequency. I am asking that the Commission look at a plan where channels where such an assignment would not cause harmful interference to other licensed stations. I will support the petitioner's request for a specific frequency for microbroadcast stations, but other frequencies must be made available to foster diversity in programming. As you will see, I am suggesting that we use some unused FM channels before we consider channels 201 through 300. Micropower FM stations would be limited to 1 watt and will be referred to as Class-E stations.

Microbroadcast use of Channel 200.
Channel 200 (87.9 MHz) can be used by stations in the microbroadcast service. This channel is currently assignable to Class-D (secondary) NCE-FM stations that are forced to change frequency but can not find any other channel available. According to the FCC engineering database from December, 1997, there is only one station on Channel 200 and it is an experimental authorization in Texas. Channel 200 should be made available where there is no TV Channel 6 or NCE-FM station on Channel 201 (88.1 MHz) (for example: Phoenix does not have a local TV Channel 6 (the nearest channel 6 stations are in Tucson and Kingman), nor does Phoenix have a station on Channel 201, therefore Phoenix would be a good candidate for Channel 200).

Introduction of Channel 199.
For areas where there is no Channel 6 but there is an NCE-FM station on Channel 201, I would like to propose that a new Channel 199 (87.7 MHz) be created. Las Vegas, NV has a local NCE-FM station on Channel 201 and no Channel 6 TV station and therefore would be a good candidate for Channel 199.

Introduction of Channel 198.
Most FM receivers manufactured today now tune FM as low as "Channel 198" (87.5MHz). I really think it's about time to consider the use of that channel for microbroadcasters in markets with no local TV Channel 6.

Dedicated channels for microrado out of the way of the "big gun" stations.
Some markets, like Phoenix, if the stations are spaced right could support micropower stations on channels 198, 199 and 200 and therefore the stations would be at their own place on the dial.

Micropower use of Channels 201-300.
If a study shows that Channels 198, 199 and 200 are not available in a given area, stations will be allowed apply for channels 201 through 300.
Protection of primary broadcast stations on channels 201-300.
Most Class-E stations that are set up on "quiet spots on the dial" will not cause harmful interference to stations on the same or nearby adjacent channels. The Commission will need to develop a standard for assigning channels in the main FM band. A rule of thumb, "if there are three quiet channels on the dial, a one watt station can be safely placed on the middle channel". For example: If there are stations audiable in the micropower's broadcast area on channels 208 and 212, but channels 209, 210 and 211 are quiet, channel 210 would be an obvious choice for the assignment and would provide co- and adjacent- channel protection to primary stations because of the stations's extremely (1 watt) low power.

Micropower FM broadcast stations outside the Top-50 urban areas.
For stations in rural areas, I am recommending a Class-D be made available with a 10 watt maximum output with no limitation on ERP. For Class-D stations, the following restrictions will apply:
- No Class D stations within 100km of the top 50 urban areas shown in footnote A.
- No Class D stations will be assigned within 200km of the Mexican border.
- No Class D stations will be assigned within 320km of the Canadian border.
- No Class D stations will be authorized on Channels 198 through 203.

Class D and E micropower stations are secondary status.
We must stress that all Class D and E micropower would be licensed as secondary status, which would mean that the micropower station would be responsible for resolving any harmful interference to full power stations and must accept harmful interference from full power stations. Class D-Micropower and E stations will need to harmoniously co-exist with translators and boosters. Micropower licensees must take into

consideration any existing translator and booster stations when requesting a frequency on the same hand, future translator and booster licensees must take into consideration any micropower stations in the translator's service area.

International border concerns.
As far as Class-D stations are concerned, we have prohibited them already near the borders. Class E and AM stations would only pose a concern if they are located within 5km of the borders. Stations close to the border must employ techniques to prevent their signal from crossing the international border. In many cases, this can be done using directional antennas. Of course, radio waves do not stop at the border.

Limits on number of stations.
I agree with the petitioner that a microbroadcast station should be able to have both an AM and FM station in their service area. This will encourge more diversity in programming including bilingual programs. The request for distance seperation between stations belonging to the same licensee should be amended to allow a "donut zone" for Class-E FM licensees. This donut-zone will allow a Class-E licensee to construct one additional Class-E FM station within 5km of their existing station. This is to allow for situations where coverage in the intended area is shielded by buildings or terrian. A licensee may only have a total of two such stations in a "chain" like this. I will agree with the petitioner's request that any additional stations owned by the licensee be a considerable distance away. In compliance with FCC rules requiring that all measurements be shown in metric, I would like to change that 50 mile restriction to a 80km restriction.

Assignment of licenses.
Due to the size of a station's service area, it will be less likely that the Commission will receive mutually exclusive applications for a specific channel in a specific area. In order to control the number of applications received by the Commission for this service, I would like to recommend that the Commission use application "windows". Each window should be at least 30 days and at least two windows per year should be provided.

Priority to High Schools and Universities.
FCC Rules Part 15 currently allows for "higher" power operations by educational institutions using carrier current technology to cover their campuses and the immediate area surrounding the campus. This type of operation is not available nor feasable for the micropower broadcaster who is not an educational institution, therefore I disagree with the petitioner that high schools and universities should be given priority licensing opportunities as an unlicensed radio service is already available to these entities to meet their needs.

Transmitter characteristics.
I agree with the petitioner that transmitters used in the microbroadcast service be of good engineering design which would transmit a high quality signal with suppression of harmonics and spurious emmissions. The output power of the transmitter would be limited based on the class of the license:

- Class D FM licensees are limited to 10 watts.
- Class E FM licensees are limited to 1 watt.
- LPAM licensees operating on 1620-1700kHz are limited to 5 watts.
- LPAM licensees operating on 540-1610kHz are limited to 1 watt.

Once again, I disagree with the petitioner's request to establish a "cell" process. If fixed size cells were established, it would be unfair to any stations operating on the perimeter of the fixed size cell. It would also cause harmful interference to stations in adjacent "cells".

Type-acceptance of transmitters.
I agree with the petitioner that licensees should be allowed to build and maintain their own transmitters as long as they meet the engineering standards addressed in the petition, these comments and Part 73. Type acceptance should not be a requirement for these transmitters as that would make the costs for this service out of reach for many.

Transmitter Requirements
The transmitter used must be either crystal controlled or frequency agile using a phased-locked-loop (PLL). The transmitter should be designed where the controls used to change the output frequency of the transmitter are not accessible without removing a cover using a conventional screwdriver. This will avoid

accidental frequency changes. At the transmitter site, there must be a frequency counter and power meter available in order to comply.

Self Inspection Process
Micropower stations would be requried to do a self-inspection of the station transmitter(s) on a pre-set period (like every 6 months). During the inspection process, the transmitter is placed on a dummy load and a spectrum analizer to determine if the transmitter is emitting any spurious emmissions that would be out of compliance with the rules.

Automated operations and transmitter accessibility.
The licensee is permitted to operate the station without a control operator. If the Commission determines that the secondary micropower station is causing harmful interference to the broadcast or other service, it can request that the transmitter be turned off until the transmitter is inspected by the licensee or the Commission. The licensee must be accessible by the Commission during all hours the transmitter is in operation. If the station is under automatic operation, the licensee must have a method in order to turn off the transmitter within 15 minutes of notification by the Commission. Even though no request was made to amend Part 97 of these rules, I would like to see a minor amendment that would allow Chief Engineers (see below) who are also licensed amateurs to use amateur frequencies in bands 220MHz and above to send control signals to micropower FM transmitters in the event of harmful interference only. These one way transmissions are limited to sub audible tones and dual tone-multi frequency (DTMF) signalling. Such a control transmission is limited to 10 seconds. Such a transmission would have to be identified with the amateur callsign of the person operating the transmitter. "Reply" transmissions from a radio connected to the AM/FM transmitter is prohibited. This amendment to Part 97 would allow microbroadcasters to respond much faster to safety of life issues and therefore would be in the public interest.

Chief engineer.
Each microstation shall designate a chief engineer (CE). The CE would be responsible for the technical operation of the station. To prove technical aptitude, the individual designated as the CE must possess one of the following:

- FCC General Radiotelephone Operator's License-First Class,
- FCC Amateur Radio License-Amateur Extra Class,
- FCC Amateur Radio License-Advanced Class, or
- FCC Amateur Radio License-General Class.

In respect to the Amateur Radio Service license requirement, Part 97 rules prohibit a licensee to operate a station in the *Amateur* service for compensation but it makes no mention of other radio services.

Antennas
As mentioned previously in this proposal, I am suipporting the petitioner's request for omnidirectional antennas with vertical polarization. I agree that each antenna should be limited to a height of 60 feet. I disagree with the petitioner's use of the word "tower". I can understand that the petitioner would not like to see an antenna on a 300 foot broadcast tower, but that term is too general. If I was to put an FM antenna on a 40 foot crank-up tower that I would use for Amateur Radio, would that be illegal? I would prefer to see restrictions like what exists for the CB radio service in §95.408 where the highest point of an antenna can not be more than 6.1 meters (20 feet) higher than the highest point of the building OR the highest point must not be more than 18.3 meters (60 feet) above the ground. This would allow me to use a crank-up tower. We must also place restrictions that would prohibit mountain-top locations. A limitation of 100 meters HAAT would work for this. If a study shows that the area is too mountainous and there is no feasable location under 100 meters HAAT, then the applicant can petition for a waiver. That waiver can be granted by the Commission with conditions (such as directional antennas or reduced power). Besides the waiver, the only other time the Commission should approve a station to operate a directional antenna is to limit their signal from radiating into a foreign country.

Proposed license fees
I feel that the license fee should be reasonable but I feel that $50 is too low. I would like to see an application fee of $150. Each year, microbroadcasters would pay an annual regulatory fee of $30 to the Commission. License terms would be 5 years and may be renewed if such a renewal meets the public interest.

Penalties
In some ways, I agree and disagree with the petitioner when it comes to penalties. I feel for technical problems where a NAL would be required, the penalties should be reasonable like the Amateur and CB radio service but in the event of violations of mass-media rules (such as obsenitity), penalties should be handled on the same strict scale as other Mass Media Bureau licensees. In the case of violation of mass-media rules, in lieu of fines, the licensee can submit their license(s) to the Commission for cancellation. The licensee can not apply for another license for two years.

Minimum Service
I agree with the petitioner that there must be a minimum weekly service threshold in order to maintain a license. I would like to recommend the requirements that apply to NCE stations in §73.561.

Station Identification
Even though not mentioned in the petition, I would like to suggest that LPAM/LPFM (micropower) stations be granted 4 letter callsigns with a two letter suffix ("-LA" for Low Power AM and "-LF" for Low Power FM). A typical LPFM/LPAM call sign would be WAAA-LA or KZZZ-LF. Call signs can not conflict with existing callsigns in the station's listening area and are not protected from full broadcast stations obtaining conflicting call letters in the future. Microstations would follow the same identification guidelines (every hour with callsign and city of license) as full broadcast stations.

Emergency Alert System (EAS)
One of the goals of the LPAM/LPFM service is to provide local programming. The EAS is a vital part of our national infistructure and some LPAM/LPFM stations may find that participating in EAS may be in their best interest. LPAM/LPFM stations should specify if they will participate (PN) or not-participate (NN). LPFM/LPAM stations that choose not to participate in EAS must follow the procedures specified in §11.18(f) and cut their station(s) carrier(s). LPAM/LPFM stations who desire to participate may do so but only at the relay level. LPAM/LPFM may not be primary stations unless the licensee requests a waiver. Waivers would be issued if it shown that there are no other broadcast facilities in the LPAM/LPFM's broadcast area that would be able to originate EAS messages under the local and statewide plans.
I am asking that LPAM/LPFM stations be included with Class-D NCE and LPTV stations by not requiring these stations to equip their stations with EAS encoders specified in §11.32 but all stations, regardless of participation status must be equipped with an EAS decoder as specified in §11.33. LPAM/LPFM stations should also be classed with LPTV and Class-D NCE-FM stations in respect to testing requirements specified in §11.61. The Commission should waive the type acceptance requirements for EAS decoders in respect to LPAM/LPFM. This will keep the prices for such equipment to a reasonable level. Licensees may also build their own EAS decoders from kits or scratch. LPAM/LPFM users should also be allowed to use personal computers equipped with special hardware to decode and re-transmit the EAS message and still meet the requirements of §11.67.

In conclusion
As we go into the year 2000, we need to give the people a voice again. Through the use of community radio and micropower broadcasting we will be able to do this. I respectfully submit these comments to the Commission in **SUPPORT** of RM-9208.

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attachments

This is to certify that a copy of these comments have been served to the petitioner.

Richard Eyre-Eagles

February 27, 1998

Footnote A

Top 50 Urban Areas

Micropower Class-D (10 watt) stations can not be licensed if the station proposes operation within 100km of the following points:

Number	City Name	Latitude	Longitude
1)	New York,NY	40-45-06	73-59-39
2)	Los Angeles, CA	34-03-15	118-14-28
3)	Chicago, IL	41-52-28	87-38-22
4)	Philadelphia, PA	39-56-58	75-09-21
5)	Detroit, MI	42-19-48	83-02-57
6)	Boston, MA	42-21-24	71-03-25
7)	San Francisco, CA	37-46-39	122-24-40
8)	Cleveland, OH	41-29-51	81-41-50
9)	Washington, DC	38-53-51	77-00-33
10)	Pittsburgh, PA	40-26-19	80-00-00
11)	St. Louis, MO	38-37-45	90-12-22
12)	Dallas, TX	32-47-09	96-47-37
13)	Minneapolis, MN	44-58-57	93-15-43
14)	Baltimore, MD	39-17-26	76-36-45
15)	Houston, TX	29-45-26	95-21-37
16)	Inidanapolis, IN	39-46-07	86-09-46
17)	Cincinnatti, OH	39-06-07	84-30-35
18)	Atlanta, GA	33-45-10	84-23-37
19)	Hartford, CT	41-46-12	72-40-49
20)	Seattle, WA	47-36-32	122-20-12
21)	Miami, FL	25-46-37	80-11-32
22)	Kansas City, MO	39-04-56	94-35-20
23)	Milwaukee, WI	43-02-19	87-54-15
24)	Buffalo, NY	42-52-52	78-52-21
25)	Sacramento, CA	38-34-57	121-29-41
26)	Memphis, TN	35-08-46	90-03-13
27)	Columbus, OH	39-47-57	83-00-17
28)	Tampa, FL	27-56-58	82-27-26
29)	Portland, OR	45-31-06	122-40-35
30)	Nashville, TN	36-09-33	86-46-55
31)	New Orleans, LA	29-56-53	94-04-10
32)	Denver, CO	39-44-58	104-59-22
33)	Providence, RI	41-49-32	71-24-41
34)	Albany, NY	42-39-01	73-45-01
35)	Syracuse, NY	43-03-04	76-09-14
36)	Charleston, WV	38-21-01	81-37-52
37)	Grand Rapids, MI	42-58-03	85-40-13
38)	Louisville, KY	38-14-47	85-45-49
39)	Oklahoma City, OK	35-28-26	97-31-04
40)	Birmingham, AL	33-31-01	86-48-36
41)	Dayton, OH	39-45-32	84-11-43
42)	Charlotte, NC	35-13-44	80-50-45
43)	Phoenix, AZ	33-27-12	112-04-28
44)	Norfolk, VA	36-51-10	76-17-21
45)	San Antonio, TX	29-25-37	98-29-06
46)	Greenville, SC	34-50-50	82-24-01

47)	Winston-Salem, NC	36-05-52	80-14-42
48)	Salt Lake City, UT	40-45-23	111-53-26
49)	Wilkes Barre, PA	41-14-32	75-53-17
50)	Little Rock, AR	34-44-42	92-16-37