

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
The Mitre Corporation's Technical Report,)
"Experimental Measurements of the Third-) MM Docket No. 99-25
Adjacent-Channel Impacts of Low-Power)
FM Stations")
)

To: The Commission

Comments of the International Association of Audio Information Services (IAAIS)

The International Association of Audio Information Services (IAAIS) is the all-volunteer association of information access services for people who are blind, visually impaired, legally blind, or otherwise disabled in a manner that prevents reading current print information. IAAIS members operate reading services on FM-SCA's, television SAP channels, telephone dial-in information systems, and stream audio via internet. The United States constituents of reading and information access services are primarily older Americans who lost the ability to use print late in life, and as a consequence, depend on the fragile signal of the radio reading service in their community to fight the isolation that a print-disabling condition can bring.

IAAIS relies on volunteers to conduct its work to promote better information access via broadcast and telecommunication technologies. It is grateful to the Commission for the extended time in which to file comment to the Mitre Study. IAAIS is in support of community based radio services. IAAIS member stations focus on providing extremely local content to the community via their FM-SCA services. IAAIS feels this local focus is what has kept the member stations on-the-air during economic down-turns, as the blind or otherwise print-disabled audience gratefully and generously supports "their" radio reading service. Radio Reading and Low Power FM services can be complimentary to a neighborhood.

We are particularly interested in the impact of LPFM stations on FM sub-carrier frequencies, as many of our members use this transmission method. We concentrated our review on the tests in East Bethel, Minnesota dealing with KNOW-FM, a Minnesota Public Radio station, as one of our major members; the Minnesota Radio Talking Book uses a 67 KHz sub-carrier on this station.

It is our understanding that 3rd adjacent protection may be relaxed for all stations except those using their sub-carriers for the broadcast of Reading Services for the Visually Impaired. While we have some concerns with this approach, we could support such a change provided the Commission can promise quick and effective enforcement of any interference that occurs to the reading services as a result of the LPFM station commencing broadcast.

The Mitre/Comsearch report indicates that there is little interference to full-powered FM stations, LPFM's. They also indicate that interference to FM sub-carriers on full power FM stations only occurs close to the LPFM transmitter concluding that LPFM therefore won't be a problem for most people. We have concern with some of the methodologies and procedures used in the study and with the conclusions reached with imprecise or poorly documented methodologies. Below are some concerns and questions that arise from them.

Comsearch took readings from various locations surrounding a LPFM transmitter in East Bethel, Minnesota. Only 19 of these locations provided good reception to start—67 did not. And of the 19 cases of good reception, 12 exhibited interference from LPFM transmissions. While this is a small number upon which to base conclusions pro or con, we are not pleased with the ratio of interfered-with to non-interfered with receiving points. While sub-carrier frequencies are fragile, our member's knowledge of the area involved and subsequent testing by them on IAAIS's behalf indicates that with a little effort, Comsearch should have been able to obtain more than 19 good reception locations. If they had done so we would now have a more accurate picture of 3rd^t adjacent channel interference from LPFM stations.

In an effort to more fully explore this situation, IAAIS member Minnesota Radio Talking Book (RTB) conducted additional follow-up tests as follows:

Since most RSVI reception in the Mitre was poor, any additional interference would be ignored by the test radio. Not satisfied with Comsearch's lack of clean reception at the East Bethel test locations, RTB went to East Bethel locations L1, L5, L6, L7 and L8. We took 5 subcarrier radios:

- One Golden Mark Success ML722 that we used in evaluating all subcarrier radios.
- Two Golden Mark Success ML722 radios that had been loaned to Comsearch for this LPFM study.
- One Compol SCA-RLA that we used in evaluating all subcarrier radios.
- One Compol SCA-RLA that had been given to us by Comsearch as a "thank you" for loaning them 4 Golden Mark Success radios. This radio was missing its whip antenna when received.

The Golden Mark Success radios were given new fresh batteries. The DC wall transformer that the Compol radios use was replaced by a battery pack to provide portability and freedom from any noise an inverter might contribute.

In all locations, all radios provided consistent, clear reception with only insignificant background noise or cross talk. Rotating the antennas and radios in all orientations permitted us to find one plane of operation where noise increased. We do not understand why Comsearch had such difficulty in obtaining good reception. Did equipment or inverters in the test vehicle generate noise? If the Compol was the receiver used, did it have its whip antenna attached and extended for the testing? Was the Compol antenna selector switch in the proper position?"

In the MITRE report, KNOW is listed as having an antenna height above average terrain (HAAT) of 400 meters. This is also 370 meters center of radiation above ground level (COR

HAGL). This was wrong during the East Bethel testing and is currently wrong. On July 19th, 2000, KNOW requested a STA (Special Temporary Authorization) from the FCC to reduce their antenna height during the digital TV construction. The new height requested was 287 meters COR HAGL. This was later reduced to 274 meters COR HAGL or 304 meters HAAT. This significant reduction in antenna height makes the Mitre information in Table 1-1 inaccurate. The height also renders FPFM path profiles on pages B-14 through B-19 inaccurate.

Table 1-1 contains another inaccuracy:

KNOW programming is listed as “Unprocessed music” it should be “News / Talk.” This is important because they transmit in mono and turn off the stereo pilot signal. This makes their signal more robust and less likely to exhibit noise and interference that stereo stations might suffer due to LPFM interference.

While public notice was given to report any interference, the LPFM transmitter only transmitted 1 hour 36 minutes at high power over the 2 days. No transmissions took place after 6:30 PM. Approximately half of that time was only at a 10 meter antenna height. To see if any interference existed, they should have been “on the air” continuously for at least a week. Programming should have contained information on who to call if this signal is interfering and mailings could have been sent to the neighborhood which would include who to call to report interference. The Mitre Report does not indicate if all of the residents in the 1.1 km circle were individually notified or was it up to them to happen to see an ad in a newspaper. Was the "station" transmitting in the evenings when many return from work or school?

One day of poor radio reception does not get immediate response from the public. A week or so of poor reception the station may get a call. Further exacerbating the assumption that there was little to no reporting interference by the public, KNOW transmission facilities are located on a tower that has had much digital TV work done over the past few years. This is supported by KNOW-FM’s request for reduction in antenna height noted above. There have been many reductions in power and other interruptions in service over the past couple of years. So, it is unlikely that KNOW-FM listeners would report any problems that happened in a one or two day period.

On page XXVI Mitre says: Interference does not generally go out 1.1 km past a LPFM transmitter. If that 1.1 km circle is in a cornfield there obviously would be no problem. If it falls in a high housing density area, such as was in mind for LPFM as a mini-community voice, there will be a much greater risk of interference.

How were the tone controls set on the RSVI radios? This can affect (mask) noise performance.

Modern auto and home stereo receivers have technology that masks signal interference or multipath. They do this with a blend-to-mono circuit in the receiver. Unfortunately, subcarrier services have nowhere to go for a “blend”. Did the listening tests take into account stereo receivers blending to mono?

As the above statements and questions indicate, we have concerns about the Mitre/Comsearch tests. At best we consider them to be inconclusive, and at worst they are misleading.

Nevertheless, with improvements in receiver technology and possible 3rd adjacent protection for existing radio reading services, we would be in a position to support rules that give reading services on FM-SCA protections and maintain or even improve complaint procedures already in place.

Conclusion

IAAIS supports more community voices as will be possible with a well-designed and technically correct LPFM service. It cannot, however, be implemented at the loss of protections to millions of blind, visually impaired, and otherwise print-disabled persons who rely on access to the printed word via FM sub-carriers.

Limiting our review of the study to the effect of Low Power FM on SCA services, we voice significant concerns surrounding the quality of the Mitre study and assumptions based on imprecise, poorly documented and erroneous data. Our own testing indicated significant improvements could have been made to the study that would have answered most of the questions on LPFM effect to FM-SCAs. Regardless, IAAIS requests the Commission move forward in developing LPFM services so long as the Commission can provide quick enforcement on interference issues and resolution as well as maintain 3rd adjacency protections for reading services on FM-SCA.

Respectfully Submitted,

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