“AM ON FM” ---- THEN & NOW

By George DeVault

Modern wide band FM radio was developed in the 1930’s by Major Edwin H. Armstrong, whose accomplishments during World War I had included the “super-regeneration” and “super-heterodyne” radio receiver circuits, the latter of which is still found in almost all radio and TV receivers today. The original FM broadcast band at 42-50 megacycles (now called megaHertz or MHz) contained only 40 channels. A small cadre of FM stations signed on the air just before the U.S. entered World War II and most stayed on throughout the war. Typically these were owned by often eccentric individuals and by newspapers. The new medium was considered special with its high fidelity and static-free properties. Most traditional AM broadcasters shied away.

After the war in 1945, the FCC moved FM to a new larger 100 channel band from 88 to 108 MHz. Although Major Armstrong and some other early FM owners were disappointed, the old band was reallocated to other services (although FM’s already on the air were allowed to simulcast in both the old and new bands during the transition). Existing broadcasting companies large and small applied for permits to construct new FM stations. Among the early existing broadcasters to add FM was WSM in Nashville, which signed on in the old band as one of the first FM stations in the South and later moved to the new band.

Gradually more and more FM stations were owned by AM licensees and were separately programmed from their AM sisters for at least some hours of the broadcast day. Among the new FM licensees were the owners of those AM stations, which had to sign off at night to prevent interference to other AM stations. For these “daytimers” FM, where there was never any limitation on operating hours, afforded the opportunity to continue to broadcast after sunset and as late as they wanted bringing them the ability to broadcast local sports events and other programming their communities had never been able to receive at night from a local station.

Unfortunately, FM, which was highly touted during the war in magazine advertisements and articles, did not catch on as anticipated. It required a separate receiver and in some cases an outside antenna. Even the large multiband console radios sold before the war featured only standard AM

broadcast and short wave bands (where listeners could tune in international broadcasts and ham radio activity). In large part the failure of listeners to flock to FM was the introduction of television on a nationwide scale. TV stole FM's thunder!

Soon almost all new FM stations of the era were owned by AM station operators, and the dominant programming on FM was a hi-fi static-free version of the same programming simultaneously heard on the owner's AM station. The practice became known as "simulcasting." Sadly by the mid-1950's more FM licensees were giving up and returning their FM licenses to the FCC than were requesting permits to build new FM stations. Among the major stations to turn in their FM licenses were WSM in Nashville and WBT in Charlotte although in later years both sought and built or acquired new FM stations. In 1966 Group W Westinghouse Broadcasting gave away it's FM frequencies in Boston, Pittsburgh, and other major markets explaining to employees there was "no profitable future in FM." In the nation's capital WTOP gave its big FM station to Howard University. A few years later that station, renamed WHUR (Howard University Radio), was D.C.'s number one radio station.

In order to promote FM, in the 1970's the FCC promulgated rules limiting the number of hours per day an FM station could simulcast its AM sister. Still later as FM became the dominant radio medium in the U.S., and AM was suffering from lack of listeners, the FCC rescinded those rules, and AM's were again allowed to simulcast up to 100% of their programming on their FM counterparts. Nevertheless, AM/FM simulcasting dwindled in popularity as broadcasters took advantage of their FM stations ---- most transmitting in stereo beginning in the early 1960's ---- to present new and varied programming formats.

In many cases the call letters on a licensee's FM station were changed from the call of the AM station in order to set the FM apart and promote it. **One might say the first era of "AM of FM" simulcasting largely ended.**

As the years passed, the fortunes of AM stations continued to decline. Interference in the standard AM band was an ever more prevalent problem most of it stemming from computers, energy-efficient light bulbs, and cheap power supplies in the barrage of small electronic items imported from the far east. While these AC to DC supplies often exceed the amount of radio

radiation allowed by the FCC's rules, the sheer volume of such devices led to an interference mess seemingly impossible to regulate effectively.

Recognizing the public services provided by AM stations and wishing to preserve what was left of the viability of the AM service, the FCC opened an "AM Improvement" docket seeking ways to improve the AM service technically.

For years the FCC had allowed FM stations to employ low power stations to rebroadcast the respective FM station into a portion of its predicted coverage area where terrain essentially blocked coverage. These stations became known as fill-in "translators." As the perils of AM increased, a number of AM licensees believed FM translators could help AM stations maintain their existence and both sustain and improve their existing coverage. These broadcasters some of whom served on the board of the National Association of Broadcasters [the NAB] asked the NAB to officially propose to the FCC that AM stations be allowed to apply for FM translators to simulcast the programming of their AM facilities. The NAB had rejected such suggestions for years in part because it had opposed the establishment of the LPFM (low power FM) or community broadcaster service. Despite NAB's opposition Congress authorized the LPFM service. Such stations have to be non-commercial and are limited to 100 watts effective radiated power. Like FM translators they were deemed a "secondary" broadcast service and thus were subject to displacement if they caused undue interference to a full power FM station or stood in the way of a full power FM station's effort to improve its technical facilities.

Eventually under pressure from a number of its AM members the NAB filed a Petition for Rule-Making with the FCC proposing that AM station licensees be allowed to operate FM translators rebroadcasting the programming of their AM stations. Comments received by the FCC from interested parties were overwhelmingly positive. In the meantime a handful of AM broadcasters approached their Congressional leaders in Washington seeking to influence the FCC to approve the proposal. A number of Congressmen wrote letters to the FCC, and in reaction to congressional inquiries the FCC began to grant waivers to AM operators seeking to construct "AM on FM" translators or to allow existing FM on FM translators to instead simulcast AM programming. **The second era of "AM on FM" simulcasting was beginning!**

Soon the FCC promulgated rules permitting "AM on FM" translators, and thousands of AM licensees filed for construction permits to build them. During

the 2017-2019 time frame there were four FCC filing windows" for new FM translators. Thousands of applications were filed, and some 3,500 were granted. While the FCC does not release figures on how many of these were to be used to relay the programming of AM stations, observers report the vast majority were for new "AM on FM" translators.

In the federally-defined Tri-City (Johnson City/Kingsport/Bristol), TN/VA, consolidated metropolitan statistical area, for example, some seventeen "AM on FM" translators have been authorized, all but one of which is on the air. In counties outside but contiguous to that CMSA there are at least another half dozen "AM on FM" translators in operation.

The FCC allows commercial FM translators to operate with up to 250 watts effective radiated power, and there is no limit on height above average terrain for these stations. In many, many cases the reach of the FM translator far exceeds the listenable coverage of the AM station it simulcasts.

Experience has revealed that once an AM station gets an FM translator, almost all listening shifts to the FM side. Almost universally these stations promote their FM frequency almost exclusively typically mentioning their AM frequency only in the official FCC- required "on the hour" station identification. Perhaps one of the most extreme examples of the "AM on FM" translator trend is WLAC in Nashville. WLAC(AM) is a 50,000 watt day and night radio station. In its on the air and printed promotion, it primarily promotes its FM translator frequency, 98.3.

Yes, the second wave of AM programming being simulcast on FM is certainly here, and the trend is breathing new life into thousands of struggling AM operations!

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Author George DeVault began his broadcasting career in 1961 at age 15. His career at Holston Valley Broadcasting in Kingsport, Tennessee, spanned over half a century. Before his retirement in early 2017, DeVault was President of the company and of its parent company for 34 and a half years. During his career Holston built one full power and a number of Class A TV stations and constructed or acquired several AM and FM radio stations. WKPT-TV was the first digitaltelevision station in the state. A

past president of the Tennessee Association of Broadcasters , DeVault has served on its board for over 50 years. As a Director of the National Association of Broadcasters, DeVault served as the first chairman of the "AM on FM" Translator Subcommittee of NAB's Radio Spectrum Committee. A strong proponent of "AM of FM" translators, his company put its first "AM of FM" translator on the air under a waiver of the FCC rules considerably before those rules were changed to allow such operations.

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