



MEMORANDUM

6/2/2023

To: Members, Subcommittee on Communications and Technology
From: Majority Staff
Re: Communications and Technology Subcommittee Hearing

I. INTRODUCTION

On Tuesday, June 6, 2023, at 10:00 a.m. (ET), the Subcommittee on Communications and Technology will hold a hearing in 2123 Rayburn House Office Building titled “Listen Here: Why Americans Value AM Radio.” The following witnesses are expected to testify:

II. WITNESSES

- Jerry Chapman, President, Woof Boom Radio
- Lt. Colonel Christopher M. DeMaise, Homeland Security Branch Commander, New Jersey State Police
- Scott Schmidt, Vice President, Safety Policy, Alliance for Automotive Innovation

III. BACKGROUND

Amplitude modulation (AM) radio serves as the backbone of the nation’s emergency communications infrastructure and plays a vital role in the Emergency Alert System (EAS). According to Nielson data, AM radio has more than 45 million listeners each month, who rely on it for local news, information, sports, and weather updates.¹ Most importantly, AM radio is an essential platform for public safety officials, including the President, to communicate directly with the public during national emergencies.

Over the last several months, numerous automakers have removed or plan to remove broadcast AM radio receivers from electric vehicles (EVs) due to electromagnetic interference generated from electric batteries.² The primary source of interference is often the high-voltage electrical components used in electric propulsion systems, such as the motor, inverters, and charging systems. These components can generate static, noise, and a high-frequency hum that can interfere with the reception of AM radio signals.³

¹ Nielson

² <https://www.freep.com/story/money/cars/2023/04/01/ford-am-radio-commercial/70062845007/>

³ <https://letter.ly/am-vs-fm-radio/>

To mitigate interference, some automakers have been working to improve the design of EV components to minimize electromagnetic interference, including shielding and filtering techniques. Other automakers have decided to remove AM radio receivers from their electric vehicles. According to letter responses to Representatives Bob Latta (R-OH) and Greg Pence (R-IN) and public reporting, seven companies — BMW, Mazda, Polestar, Rivian, Tesla, Volkswagen, and Volvo — have removed analog AM radio from their electric vehicles.⁴

In April, Ford Motor Co. announced it would not include AM radio in any of its new models beginning in 2024.⁵ However, on May 23, “after speaking with policy leaders about the importance of AM broadcast radio as a part of the emergency alert system” Ford reversed their decision and will include it on all 2024 Ford & Lincoln vehicles.⁶

IV. FREQUENCIES

A. AM Radio

Amplitude Modulation refers to the information encoded by varying the amplitude (height) of the carrier wave. The result is a radio signal that can travel much farther and reach a broader audience than frequency modulation (FM) signals.⁷ AM radio can also provide a stronger signal in rural areas and around tall buildings or other obstacles without the need for terrestrial boosters. This is particularly useful for emergency announcements and public service messages that need to reach a wide area quickly. One of the main limitations of AM radio is its susceptibility to interference from atmospheric conditions, which can cause broadcasts to fade in and out. This is why AM signals are not as crisp as FM signals.⁸

B. FM Radio

Frequency Modulation is encoded by varying the frequency or number of times per second the waves oscillate. FM frequencies have a higher bandwidth than AM allowing the signals to carry much more information and allowing for better sounding broadcasts.⁹ FM signals also are less susceptible to static interference, providing a superior sound quality for listeners. This underscores why AM radio typically broadcasts news and talk shows whereas FM radio broadcasts music. Lastly, FM signal range is much smaller than AM’s range and can be blocked by physical obstacles, making the signal difficult to receive in some areas.¹⁰

⁴ <https://www.markey.senate.gov/news/press-releases/senator-markey-criticizes-eight-automakers-for-removing-broadcast-am-radio-from-vehicles>

⁵ *Id at 2.*

⁶ <https://twitter.com/jimfarley98/status/1661024295110463491>

⁷ *Id at 3.*

⁸ <https://history-computer.com/am-vs-fm-radio-explained/>

⁹ *Id at 3.*

¹⁰ *Id at 3.*

V. NATIONAL PUBLIC WARNING SYSTEM

A. The Integrated Public Alert & Warning System

The Integrated Public Alert & Warning System (IPAWS) is the Federal Emergency Management Agency (FEMA) national system for local alerting that provides authenticated emergency and life-saving information to the public through radio and television via the EAS, to mobile phones using Wireless Emergency Alerts (WEAs), and on the National Oceanic and Atmospheric Administration's (NOAA) Weather Radio.¹¹

B. Emergency Alert System

The EAS is a national public warning system commonly used by state and local authorities to deliver important emergency information, such as weather and AMBER alerts, to affected communities over television and radio.¹² This system's principal purpose is also to provide the President of the United States with the capability to address the American people within 10 minutes during a national emergency.¹³ Broadcast, cable, and satellite operators are the stewards of this public service in close partnership with state, local, tribal, and territorial authorities.¹⁴

FEMA, in partnership with the Federal Communications Commission (FCC) and NOAA, is responsible for implementing, maintaining, and operating the EAS at the federal level. Most EAS alerts originate from the National Weather Service (NWS) in response to severe weather events, but an increasing number of state, local, territorial, and tribal authorities also send alerts. In addition, the NOAA Weather Radio All Hazards network, the only federally sponsored radio transmission of warning information to the public, is part of the EAS.¹⁵

C. Wireless Emergency Alerts

WEAs are short emergency messages from authorized federal, state, local, tribal, and territorial public alerting authorities that can be broadcast from cell towers to any WEA-enabled mobile device in a locally targeted area. Wireless providers primarily use cell broadcast technology for WEA message delivery. WEAs can be sent to mobile devices when someone may be in harm's way, without the need to download an app or subscribe to a service. WEAs are short messages that warn the public of an impending natural or human-made disaster.¹⁶

¹¹ https://www.fema.gov/sites/default/files/documents/fema_ipaws-process-playbook-version-1.0_20210120.pdf

¹² <https://www.fcc.gov/emergency-alert-system>

¹³ <https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/emergency-alert-system>

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ <https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/wireless-emergency-alerts>.

VI. AM RADIO

A. Public Safety

Nearly 80 AM radio stations play a crucial role serving as Primary Entry Points (PEPs) across the country.¹⁷ PEPs are designated radio stations whose signals cover 90 percent of the American population and have a direct connection to FEMA and the NWS. In times of crisis, these stations receive emergency information and alerts directly from the federal government, ensuring a reliable and authoritative source of information for the public.¹⁸ These stations are equipped with backup communications equipment and generators that allow them to continue broadcasting information to the public during and after an emergency.¹⁹

Once a designated PEP station receives an emergency alert, it broadcasts the message from one station to another. This allows the emergency alert to reach a wide audience, covering both urban and rural areas, in a short amount of time.²⁰ This system provides built-in redundancies, as multiple AM radio stations within the same area can receive and relay the same emergency information. This ensures that even if one station is compromised or offline, the message can still be disseminated through other stations, providing a resilient system to keep communities informed during emergencies.

AM radio stations continue to function during power outages, natural disasters, or other emergencies, providing critical updates and information to the public. WEA may not be as reliable in these situations, as cell towers can be damaged or overwhelmed by high call volumes.²¹

B. Local Broadcasting

Today, there are nearly 4,500 AM radio stations nationwide.²² From investigative reports to breaking news and weather coverage, broadcasters keep American's informed. Nielsen reports AM radio still accounts for 20 percent of the share of terrestrial radio listening, with time spent listening to the AM dial hovering around two hours each day.²³

Additionally, AM stations host popular talk show programs giving consumers a way to listen to political debate and discuss their ideas about society in a free, uncensored environment. They also serve minority communities and underrepresented groups with religious and in-language programming.

¹⁷ <https://www.wearebroadcasters.com/dependonam/ameas.asp>

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.* at 18.

²¹ *Id.* at 18.

²² <https://www.forbes.com/sites/bradadgate/2023/04/14/with-am-radio-no-longer-available-in-some-evs-carmakers-are-facing-a-backlash/?sh=275a3d9b1a26>

²³ *Id.*

VII. CONGRESSIONAL ACTIVITY

- On May 15, Communications and Technology Subcommittee Chair Bob Latta (R-OH) and Rep. Greg Pence (R-IN), along with 102 Members of Congress, sent a letter to several automakers expressing concern about reports that companies have removed or are planning to remove AM radio receivers from vehicles.²⁴
- On May 17, Representative Josh Gottheimer (D-NJ), along with Reps. Kean (R-NJ), Menendez (D-NJ), Westerman (R-AR) and Perez (D-WA) introduced H.R. 3413, the AM for Every Vehicle Act, which would require NHTSA to mandate AM broadcast radio in new vehicles at no additional charge.²⁵ In the Senate, S. 1669 is companion legislation led by Senator Ed Markey (D-MA) and Senator Ted Cruz (R-TX).²⁶

VIII. KEY QUESTIONS

- What are the public safety implications for removing AM radio receivers from vehicles?
- What impact will the removal of AM radios from cars have on the reach and accessibility of AM radio stations in local communities?
- What technology is available that can address signal interference from EVs to the AM radio receivers?

IX. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Kate O'Connor or Giulia Leganski of the Committee Staff at (202) 225-3641.

²⁴ <https://drive.google.com/file/d/13hXwlp0tgOmj8nCMrOxtPLvEM3mRVT4l/view>

²⁵ <https://www.congress.gov/bill/118th-congress/house-bill/3413/text>

²⁶ https://www.markey.senate.gov/imo/media/doc/am_radio_for_every_vehicle_actpdf.pdf