Janice S. Lintz

Before the
US Department of Transportation
Washington, D.C. 20554

In the Matter of	)	
	)	
Transportation Services for Individuals	)	DOT–OST–2023–0166
with Disabilities: ADA Standards for	)	
Transportation Facilities	)	

JANICE LINTZ'S RESPONSE TO NOTICE OF PROPOSED RULEMAKING

"All views expressed are my own and do not reflect the position of the Department where I work. The following is based upon information and belief."

February 6, 2024

Executive Summary:

People who are hard of hearing want to hear sound and not live in silence just reading words. They don't use American Sign Language and need induction loop technology, which works with the telecoil in their hearing aids or cochlear implants to enable them to participate effectively in society. Telecoils don't have connectivity or security issues, don't burn through pricey batteries, aren't proprietary, and are used globally in various settings beyond mobile devices. Multiple federal agencies, states, and countries support induction loops.

The GSA requires contractors to state that they comply with disability access without defining what that means. People who are hard of hearing need the DOT to create a clear definition indicating that effective communication includes bringing the sound to a person's hearing aids or cochlear implant in the least intrusive manner that doesn't require a person to disclose their disability.

Issues

The Comment analyzes the DOT's request for:

1-Feedback on areas including, but not limited to vertical access, communications, and wayfinding. All vertical access and communications, including wayfinding that have two-way communication, should have an induction loop for people who are hard of hearing. Bluetooth compatibility is not a substitute for telecoils and should not replace telecoil technology.

2-Comment on any other aspects of the current accessibility requirements for transportation facilities under the ADA contained in DOT's regulations governing transportation service.

The Background

The Problem

Thirty-plus years after the passage of the Americans with Disabilities Act (ADA) of 1990, people who are hard hearing are still not receiving the services they need. The ADA forgot people who are hard of hearing unless there is an auditorium with a microphone. Further, Section 504 of the Rehabilitation Act uses the vague term "effective communication," which no one knows what it means. I detail the issues in my letter to President Biden.

Part of the problem stems from people who are hard of hearing being combined with people who are deaf despite most of this combined population not using American Sign Language (ASL). Of the approximately 72.88 million Americans with some degree of hearing loss, a very small number use ASL. The estimated ASL-using population varies, but 500,000 appears to be in the ballpark range; most larger estimates have been based on the number of people who are deaf, but the majority are late-deafened and don't use sign language.

It should also be noted that the availability of cochlear implants has reduced the number of deaf people who use ASL. Despite the fact that the proportion of sign language users is very small, there are misperceptions that people who are deaf and hard of hearing all use American Sign Language and that captions or passing notes are suitable substitutes for hearing. People who are hard of hearing want to hear the sound. Although, ASL is critical for those who need it.

Further, most access coordinators in the US have visible disabilities, while people who are hard of hearing have an invisible disability. People with visible disabilities often believe that hearing loss is not as severe as a visible disability, so it is overlooked. This is further exacerbated by the fact that many people who are hard of hearing do not want to wear a visible device or self-identify as having a disability.

People who are blind or have low vision want an FM or infrared system so they can have audio description. However, if these systems are also used to provide access for hearing loss, people who are hard of hearing must wear a receiver. In contrast, induction loop assistive listening systems provide receiverless access to those whose hearing aids and cochlear implants have telecoils. Therefore, two systems should be provided—FM or infrared for people who are blind and with low-vision and induction loops for hearing access. Providing substandard combined access, as proposed in a recent email from the MTA, is not a suitable solution:

> We know finding an effective solution for audio/visual information that can be universally used is the path forward. From discussions with experts in this field, our customers, and fellow transit agencies, **a more universal solution like speech-to-text** is the future. (Bold added for emphasis.)

The best and least intrusive access should be provided for each disability. One disability group should not be forced to use a type of access that is better for a different disability. Doing so pits one group against another.

Access that isn't used, isn't effective communication. People who are already wearing a hearing aid or cochlear implant don't want to wear another device that is stigmatizing, bulky, uncomfortable, and often doesn't work, nor should they have to do so.

Further, induction loops are the only assistive listening system that work in transportation transient settings. Distributing devices doesn't work with transportation.

No federal agency has a clear definition of what effective communication means. As a result, there is often no effective communication for people who are hard of hearing. There is minimal information on effective communication on every

executive agency's website. The definition hasn't been updated in decades despite advancement in technology. Further, the US government barely counts people who are hard of hearing. The CDC in one survey omitted people who are hard of hearing, since the CDC decided to use the telephone to conduct the survey and many people who are hard of hearing have difficulty hearing on a phone. The new Census Bureau questions are no better.

In addition, Section 504 of the Rehabilitation Act lists access without explanation of how it is used. Access is perceived as a menu to pick and choose with no rhyme or reason as to how the types of access used are meant for which situations or for which part of the spectrum of people with hearing loss.

To further complicate the issues, there is only one major national organization dedicated to people who are hard of hearing, the Hearing Loss Association of America, (HLAA), which is severely underfunded and heavily funded by hearing aid companies indirectly through its magazines. As a result, the organization has one person dedicated to advocacy, who can barely keep up with the number of federal comments.

Securing access for people who are hard of hearing is exhausting and often downright impossible. I know, since I have spearheaded the most significant hearing access projects in the United States, such as for New York City's taxis, subway information booths/call boxes, museums, and Amtrak. I find the process exasperating and exhausting.

For example, I worked for *years* pro bono including countless phone calls, meetings, and letters to get induction loops added to airports including LaGuardia, Newark, and JFK in New York City. LaGuardia Airport opened with an induction loop only at the Guest Services Counter (See below.) LaGuardia decided that people who are hard of hearing only needed to hear at a Guest Services desk (left photo) and not at TSA or any gate. Delta's gate at Detroit Metropolitan Wayne County Airport (right photo) shows that Delta thought otherwise.

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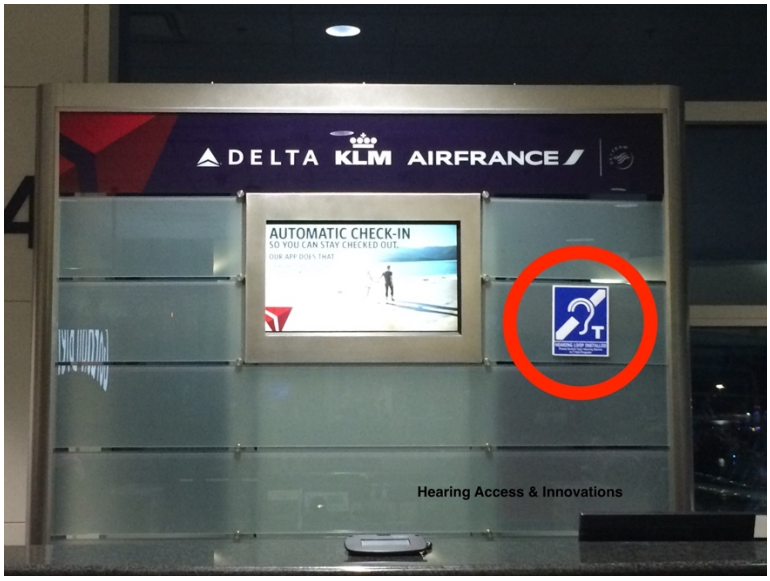


When I filed a 504 complaint, the FAA advised me:

> Under 28 CFR § 35.160 and 49 CFR § 27.7(c), airport sponsors that receive Federal funds and are public entities are required to provide effective communication and related auxiliary aids to people with disabilities who require them to communicate as part of their airport programs. **However, there are no specific facility design requirements under the ADA Standards for Accessible Design ("ADAAS") for gathering areas**, except for spaces that are considered "assembly areas," as defined in the ADAAS. See 2010 ADAAS Sec. 221. **Airport gate areas, customs, and baggage claim are not generally considered assembly areas**; therefore, they do not need to include any particular communication features, including induction loops or similar communication accessibility features. See Sec. 703.7.2.4 of the 2010 ADAAS. (Bold added for emphasis.)

A request to escalate the issue resulted in the following response:

> Thank you for bringing this matter to our attention and reviewing the response, as we discussed below. Regrettably, in accordance with our operating practice, the US Department of Transportation (USDOT) Office of General Counsel will not respond at this point concerning the definition of an assembly area and we do not have a "escalation," or reconsideration option for this inquiry. **However, anyone can petition** the USDOT to change its position through a rulemaking. Please refer to https://www.transportation.gov/regulations/petitions. (Bold added for emphasis.)

The DOT's FAA does not believe an induction loop is a reasonable accommodation or modification. For the record, the FAA employee chose to tell me to file a

Petition rather than advise me about this request for Comments. The perception that consumers have the time to file petitions for a known issue is absurd.

As a traveler with a daughter who has hearing loss who has almost missed a flight multiple times because of gate changes, I am left confounded as to how the DOT omitted induction loops when airports globally (please scroll down to Airports) have them as well as various locations around the country, as I discuss below. LaGuardia Airport is just the tip of the iceberg.

As such, I request that the DOT define "effective communication," a key legislative term, distinguishing the different access needed for people who are deaf and hard of hearing based on reaching the full spectrum of people who are hard of hearing.

Hearing loss is a spectrum (please scroll down), and where a person is on the spectrum determines the access that person needs. The US government should use the three-prong approach to effective communication to reach the full spectrum of people who are hard of hearing. Please see the link to the chart detailing the access. The three prongs are:

1. *Auditory*--Bringing sound to a person's ear, hearing aid, or cochlear implant with a prioritization of using the least stigmatizing system for assistive listening in sound, talking, or recording settings.
2. *Visual*--Converting sound into synchronized words, with the type of access varying depending on the situation. CART upon request with advance notice.
3. *Qualified Interpretation*--Providing American Sign Language (ASL) or other qualified interpretation upon request with advance notice.

I detail the distinctions in my Guide to Effective Communication and in the National Park Service (NPS) Guidelines, which I helped to write. The NPS acknowledged my contribution on page 76.

The access should not be a menu to pick and choose from. All three need to be provided, since when only one or two are provided, part of the spectrum isn't receiving effective communication. For example, a chart like the following should be provided rather than an access list. The chart provides clarity that the venue needs to provide access for the full-spectrum of people who are deaf or hard of

hearing and how the environment dictates the access provided.

	Audio	**Visual**	**Qualified Interpretation**
Bus	Induction Loop	Real-Time Message Board	iPad that connects to an ASL interpreter.
Train including Platforms	Induction Loop	Real-Time Message Board	iPad that connects to an ASL interpreter.
Kiosk	Induction Loop	Captions	n/a
Elevator	Induction Loop	Keyboard for Typing	Video for ASL
Service Desk	Induction Loop	iPad to Type	iPad that connects to an ASL interpreter.

Hearing access for the people who are hard of hearing is feasible, since transportation globally (please scroll down) uses induction loops, including for adjacent platforms, buildings, conference rooms, and waiting areas. Without induction loops in transient settings, people who are hard of hearing are left unable to hear.

People who are hard of hearing have received a compromised experience for far too long. Without mandated requirements, the access varies across the country as noted above and below with airports across the country. We don't permit this for wheelchair access, so why are we permitting inconsistent access for people who are hard of hearing? People who are hard of hearing deserve a clear effective communication definition that is not so broad that the definition is used as an escape hatch to evade implementing access.

Bluetooth vs. Telecoil Technology

People who are hard of hearing prefer telecoil technology over Bluetooth technology. A telecoil connects electromagnetically, making it more reliable, and it

doesn't burn through expensive batteries like Bluetooth. Further, some companies like Apple use proprietary Bluetooth technology. Changing phones or hearing aids may require replacing the other due to pairing issues. Telecoil technology is consistent across devices and does not require changes or updates. Bluetooth technology isn't available in places of public accommodation or globally. While there are potential future options like Auracast, which uses the Bluetooth standard, works with all devices, and doesn't reportedly consume significant battery life, no company currently supports it. I discuss the problems in further detail in my recent Federal Communications Commission (FCC) Comment.

To my knowledge, there are no venues/facilities (there are no locations under Find a Location) currently advertising a publicly accessible Auracast solution. Multiple emails to Auracast's CEO were unanswered. Auracast's board is composed of former cell phone and computer technology company employees. The company's website shows no use cases, proof of concept, or disability organization connections.

Auracast may be a foreseeable future solution; however, it will take a considerable amount of time to reach a market adoption to a similar level to that of the telecoil. Even when new phones come to market with Auracast, an end user needs access to not only the latest hearing aids but also the latest cell phone. That requires significant sums of money.

People who are hard of hearing typically keep their hearing aids for 5-7 years, despite changing their mobile devices every 2-3 years. Hearing aids cost from $4000 to $8000/pair. Eliminating the telecoil would require a person to purchase new hearing aids to hear a new cell phone. Most people cannot afford to just toss their hearing aids because they purchased a new mobile device or vice versa. The FCC should not force people to replace working hearing aids to use their mobile device.

Bluetooth is also reportedly not allowed in secure areas like the State Department. Telecoil technology does not have such restrictions. The US Supreme Court and, reportedly, the vice president's residence has induction loops.

If I saw better hearing access than induction loops, I would be asking for it, but currently, there is none. We have all seen the promise of disability access that

sounds good but fails to work as promised, such as is described in the 3M earplug lawsuit.

Other Federal Agencies

Other Federal agencies use telecoil technology. For example, the Veterans Affairs (VA), as per the Office of the Secretary, mandates "contracted vendors to provide at least two (2) hearing aid models that include telecoil capabilities 'where possible.'"

The Department of the Interior/National Park Service (NPS), a federal agency, recommends induction loops in its Programmatic Accessibility Guidelines for National Park Service Interpretive Media to ensure full spectrum hearing access in its parks. Though it doesn't say so directly, the NPS thus implies that it supports telecoil usage via an induction loop.

The Pentagon, a federal agency, required the Intrepid Sea, Air & Space Museum (please scroll down to Museums) to adopt induction loops in the space shuttle exhibit to receive the space shuttle. Though it doesn't say so directly, the Pentagon thus implies that it supports telecoil usage via an induction loop.

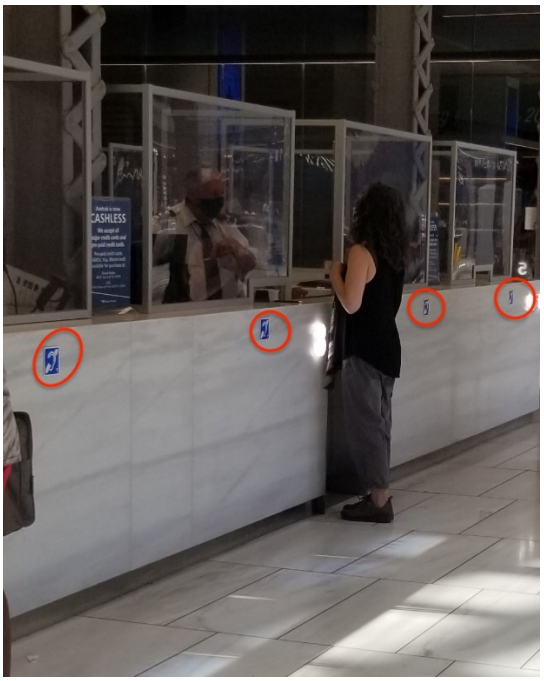
Further, the Office of the Secretary, Department of Veterans Affairs wrote me on October 27, 2022:

> The VA agrees that the telecoil technology can have an important role for improving the ability for individuals with hearing loss, who wear hearing aids, to hear in venues that utilize induction loop assistive listening systems, such as museums, theaters, churches, etc.
>
> To that effect, the current VA hearing aid & wireless accessories contracts stipulate that all contracted vendors provide at least two (2) hearing aid models that include telecoil capabilities, where possible.
>
> There are 51 models on contract that have a telecoil as an ordering option (54.2% of all models). Each style of hearing aid, with the exception of invisible-in-Canal styles, can be ordered with a telecoil when taking all vendors into account. Thank you for your advocacy and have a wonderful day!

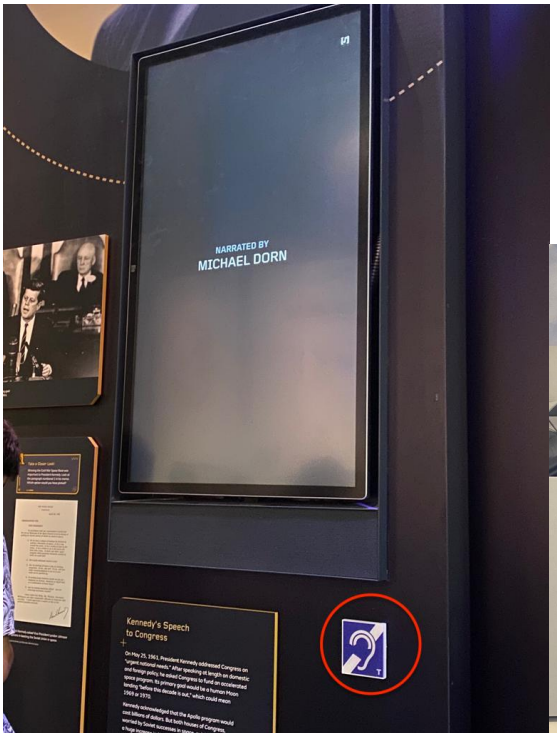
The United States Holocaust Memorial Museum (please scroll down to Museums),

a quasi-federal museum, offers induction loops. Though it doesn't say so directly, this Museum thus implies that it supports telecoil usage via an induction loop since it offers induction loops.

New trains for Amtrak, a federally chartered corporation, will have induction loops. The information desks already have induction loops.



The National Air & Space Museum added induction loops to its video exhibits this year at the request of the Congressional Appropriations Committee.



The US Department of Education does not specifically require induction loops, however, the agency requires "**auxiliary aid or service must be provided in a way that protect the privacy and independence of the person with the disability**." Induction loops do not announce a person has a disability, unlike wearing a receiver or headset does. (Bold added for emphasis.) Children on school trips use public transportation and should be able to access information through their hearing aids or cochlear implant, especially in an emergency.

Further, the President's Executive Order 14035: Diversity, Equity, Inclusion and Accessibility (June 25, 2021) requires "a commitment to ensuring that people with disabilities can **independently access** every outward-facing and internal activity or electronic space, and the pursuit of best practices such as universal design." (Bold added for emphasis.) Induction loops enable a person who is hard of hearing to independently access sound without relying on a person to distribute, retrieve, charge, or ensure the neckloop works.

The US Department of Transportation website did not have anything comparable.

States Supporting the Telecoil

New York State is one of approximately seven states (Arizona, Delaware, Florida, Maryland, Rhode Island, and Utah) requiring audiologists to discuss telecoils with patients.

In 2015, New York State reached a settlement agreement with Kinney Pharmacy for failing to implement induction loops in its pharmacies. (See Paragraph 21)

In 2020, New Jersey introduced A5464/S3660, now A1487 in 2022-2023, proposing to "require [] induction loop listening system installation in certain buildings open to public upon new construction or substantial renovation."

In 2022, Senator William N. Brownsberger and I cosponsored Bill S.19691 in the Massachusetts Senate, aiming to add induction loops to POPA's service counters.

The Los Angeles Commission on Disability sent a letter to Mayor Garcetti in 2021, recommending that:

> City vendor contracts and agreements contain language requiring accessible communication for programs and facilities and that public facilities and transportation projects (whether new developments or refurbishing) include Induction Loop Technology (ILT) wherever a public announcement system or other audio system will be used regularly to communicate information to the public.

San Francisco's BART trains have induction loops.

In 2023, New York State introduced A064322 to mandate induction loops at service counters in buildings.

In 2024, New Jersey offered $600,000 to make public spaces more accessible for hearing loss, which includes induction loops.

I am in conversations with other states that are drafting legislation to add induction loops. Consumers are demanding that states enact legislation to require induction loop technology, which they need a telecoil to use, despite companies asking the FCC to remove the telecoil requirement. Companies want to force consumers with hearing loss to purchase pricey or proprietary devices that benefit the companies and not people with hearing loss.

Internationally

A removal of the telecoil requirement by the FCC would have a global impact on the ability to access key announcements, theater, and critical information. For example, the International Code Council mandates for ticket windows at stadiums and arenas that "at least one window at each location shall have an assistive listening system" under ICC#1108.2.7.2.3 The New York Yankees and Mets implemented an induction loop system at their ticket windows in compliance with

this requirement, ensuring that people who are hard of hearing can access the information they need to enjoy the game.

Further, other countries use telecoil and induction loop technology. (Please scroll down.) The photo montage documents the widespread use of induction loops in various settings globally, including airports, banks, conference rooms/classes, entertainment/stadiums, elevators, ferries, hotels, museums, pharmacies, rail/trams, and taxis, among others. However, I never saw Bluetooth available in any setting as I traveled to 155 UN countries and 215 countries, territories, and unrecognized nations.

Again, the EU DMA clarifies the need for interoperability whether for digital marketing or hearing aids. Israel requires induction loops in its Statutes, and loops are everywhere.

The US should consider visitors to the US who have telecoils, which are internationally used.

Issues

DOT should mandate induction loop technology in airports, buses, bus stops, rental cars and transfer stations, conference rooms, elevators, fare vending machines, passenger vessels, rail, public address systems. rental vehicles, taxis, and all other transportation and corresponding facilities. For the last 20+ years, I have fiercely advocated for the inclusion of induction loops in transportation. I have had numerous meetings with DOT senior officials dating back to 2016, yet the access for people who are hard of hearing hasn't advanced.

Without the DOT clarifying and mandating effective communication and updating the ADA, people who are hard of hearing are beholden to each organization's personal interpretation. That interpretation varies tremendously and changes each time the administration changes. For example, as I discuss below, induction loops were in the New York City taxis, but now that the taxis are being retired, so are the loops. A new administration means new interpretations of what needs to be provided, and people who are hard of hearing are back to square one.

I have worked with 100+ organizations and government agencies globally, and

there is no rhyme or reason as to why I have accomplished hearing access in some places and not others. I usually find it has to do with the person I am dealing with and their own issues with disabilities. As a result, I often feel like I am pushing a huge rock up a mountain. That is burdensome and unfair to people with hearing loss.

Airports

Airports around the country, including Arizona, and globally, including Dubai, are including induction loops in their terminals, indicating that loops are here to stay. However, LaGuardia Airport, as noted above, only added an induction loop to the Guest Service counter. (See above.) Effective communication for people who are hard of hearing should be consistent across the US.

Car Rentals

The National Highway Traffic Safety Administration (NHTSA) did a Proposed Rulemaking regarding vehicle modifications to accommodate people with disabilities. People who are hard of hearing were not considered people with disabilities. I submitted a Comment, since my daughter cannot hear the GPS when she drives. However, induction loop access wasn't addressed despite, on May 16, 2022, the NHTSA advising me that they "did not identify any DOT related research." The NHTSA has never investigated induction loops in vehicles. Further, on June 13, 2022, I was advised:

> I have been told by the subject matter experts to whom I have directed your emails, that there is nothing preventing rental car companies, taxi fleets, and individual vehicle owners from installing induction loops in vehicles for use by persons with hearing loss. Additionally, I have been told that **it is outside the scope of NHTSA's jurisdiction to force such companies to install induction loops** for those who are hearing impaired. (Bold added for emphasis.)

Again, I was advised to file a Petition, addressing requiring induction loops in taxis and rental cars, despite the NHTSA/DOT knowing that induction loops work in vehicles and benefit people who are hard of hearing.

Passenger Vessels

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I was appointed by former US Access Board Executive Director David Capozzi to the US Access Board's Passenger Vessel committee. The ship and ferry regulators fought vehemently against induction loops and claimed it was impossible to add induction loops to ships. Meanwhile, as I note in my letter to President Biden, Australian, Canadian, Norwegian as well as Boston, Massachusetts (see below) ferries have induction loops, proving it is possible when there is a will.

In fact, New York City claimed that they knew British Columbia has induction loops but could not reach the ferry company. (See my letter to President Biden.) Not only did I reach the ferry company, but Prime Minister Trudeau's office sent the CAD drawings (Ex B in linked letter), and the Norwegian Department of Transportation unofficially translated its contract for me. (Ex C in linked letter)

However, without a clear statement defining effective communication to include induction loops, especially for emergencies, cities like New York City will evade providing access for people who are hard of hearing.

Mayor DeBlasio, who was unaware of the issue, tried to assist me when he was a fellow at Harvard Kennedy School while I was a student there. Hornblower Ferry refused to respond to either him or me, yet Massachusetts ferries have induction loops. Again, two states display two different opinions on the need for induction loops for ferries.

Buses/Rail

I worked with New York City Transit (NYCT) Presidents Peter Kalikow and then Howard Roberts to have induction loops added to the City's information booths

and then call boxes. (See below.) After Howard Roberts, each subsequent president, and Metropolitan Transportation Authority (MTA) chair, has done everything possible to prevent the addition of hearing access.

In 2013, David Capozzi again appointed me to the US Access Board's Rail Committee. The MTA representative was repeatedly chastised for using offensive disability language and had no interest in adding induction loops to any rail cars controlled by the MTA.

When Moynihan Station was built, induction loops were "forgotten," but the disability access coordinator did not forget wheelchair access. The MTA added induction loops after I filed a complaint. (See Amtrak photo above.)

The NYCT's buses piloted induction loops successfully. (Ex A) Former MTA CEO Thomas Prendergast claimed the MTA never piloted induction loops, not knowing that I had the internal report sent to me by someone who worked at the MTA. I filed a complaint with the DOJ.

Then in 2020, I was told:

> Thank you for sending the documents, received everything. My team and I have reviewed everything you sent and spoken at some length to our Department of Buses, Capital Budgeting group, industry colleagues and others on this issue. To clarify, what you sent is a series of photos from 2008 of potential loop locations/wiring configuration for a single NYCT bus. We did confirm that there was some work done at that time to test hearing loops on buses, and that a loop was installed on a single bus as a proof of concept. However, all of our records show that this testing was not successful and therefore did not move beyond this initial proof of concept phase.

Except I was on the bus with other advocates who tested the induction loops and they worked. The MTA/NYCTA statement is a falsehood. The buses were tested for 6 months to a year and had no outside interference.

On March 20, 2021, Craig Cipriano of the NYCT advised me:

> "Despite the significant challenges of managing COVID over the last 15 months, I'm glad to report that we have made progress. Thanks to the mostly positive feedback we received from participants like yourself in the multiple field tests we conducted ending in Q1 2020, we worked closely with our vendor to fine-tune and calibrate the hearing

> loop system and **finalize a specification for new buses**. (Bold added for emphasis.)
>
> One of our bus manufacturers (Nova) is installing hearing loops in 3 new pilot buses for further testing and evaluation. We expect to have these buses on the property this Fall, at which point we will once again get a group of 5-10 hearing aid users on the bus to get additional feedback. The tests will include monitoring performance of the system in-service with the bus in motion and testing various types of potential interference. We will use that feedback to revise our specs as necessary moving ahead.
>
> Please let me know if you would like to participate in the upcoming round of testing and I will forward your interest to the team."

However, by July 2022, the MTA claimed the loops did not work.

> The buses are not on the road yet. Testing has not gone as expected and we're looking into potential troubleshooting opportunities. I will let you know as soon as the buses are on the streets.
>
> Thanks for following up!

On August 19, 2022, I was told:

> Our two new buses with induction hearing loops installed by the manufacture are in testing. We are in active conversations with the bus manufacture and I am happy to update you on the progress of these conversations.

I advised the MTA the contracts needed standards.

On August 26, 2022, I was told:

> I'd like to again thank you for your continued advocacy for hearing access throughout the MTA. At this time I cannot give you a specific timeframe when the new buses will be on the road. However, I can tell you that we did in fact provide the bus manufacturer we are working with specifications on the hearing loop systems we were hoping to receive. As I mentioned to you before, we are in active conversations with that OEM and other OEMs on their experiences installing hearing loop systems in buses.

On November 22, 2022, after contacting the MTA President, I learned the bus company subcontracted out the loops and the loops did not meet the required standards:

> Happy thanksgiving to you as well. I've been in conversations with our bus team and

> they've requested to meet with our manufacturer on this topic. **It appears the bus manufacturer hired a third party to install the hearing loops on the buses we just got and the install did not follow the specs we provided.** We're still trying to carve out a plan on how to remedy the situation and who will be doing that work. You can trust we're on it.
>
> Thanks for checking in and I will follow up with future developments.
> (Bold added for emphasis.)

To date, the MTA has not followed up on induction loops in buses. If I do not repeatedly follow up as noted repeatedly, the induction loop access will not occur. Meanwhile, despite the MTA's claims about Australia, Australia's new electric buses will have induction loops.

As you can see from the email thread, the MTA's access coordinator has one excuse after another for why the MTA cannot add induction loops to trains, buses, rails, and stations. For example, the NYCT could not add induction loops to the stations after piloting them:

> Thank you for reaching out regarding hearing loops on buses and subways. When I first created my team, one of my directives to them was to look for solutions to ensure proper communication access to people who are D/deaf or hard of hearing across all our modes of transportation. This included conducting analysis of current asset capabilities, collecting data about technology implemented at other transit agencies, and discussions with organizations and advocates to understand challenges, suggestions, and potential solutions. Based on the information gathered, hearing loops, Bluetooth technology, ASL, and speech to text seemed like options that warranted additional testing.
>
> In 2020, the team launched the Accessible Station Lab (mta.info), where we tested over a dozen different accessibility features to enhance customer experience for our riders with disabilities. One of the features was a hearing loop on the Bowling Green subway platform. The goal of the testing was to determine if hearing loops were a feasible solution to members of the hard of hearing community. The hearing loop on the subway platform was ineffective and in fact, our advocates who used different assistive hearing devices (T-Coil, T-Coil + MIC, Cochlear implants, and Cochlear implant + hearing aid) had to turn off their T-Coil setting due to the intense interference. The interference was present due to the third rail, communication systems, HVAC systems, escalator equipment, and lighting within the station environment. This type of interference could not and cannot be mitigated nor regulated to get the hearing loop to work as intended. Based on the feedback from advocates, an audiologist team, and the vendor, it was determined that hearing loops in our subway station environment was not feasible. As

such we are exploring other viable solutions to ensure effective communication in stations, subway cars, and rail cars.

Regarding hearing loops on buses, the team collected extensive data which included other transit agencies across the world with hearing loop technology on buses. Using a vendor that had some success with installing hearing loops on Transportation for London (TFL) buses, we fitted a bus with a double-looped hearing loop. Testing was conducted with a group of participants who used various assistive devices (T-Coil, T-Coil + MIC, Cochlear implants). During this testing, major issues were identified, and two additional tests were conducted based on feedback provided by participants. Major challenges were identified and unable to be rectified by the vendor and audiologist teams. The key challenges identified with hearing loops on buses are:

Interference: During each test, users experienced static and audible interference throughout the bus. This interference is in part due to the environment in which our buses operate.

Announcement clarity: Users had challenges with clarity of both manual and automated announcements. Depending where customers were on the bus, the clarity of the announcement was impacted in a variety of ways.

Customer utility: No solution was identified to notify users to switch on their t-coil setting when manual and automated announcements are made. In addition, research shows that a minimal number of customers who are hard of hearing use hearing aids with T-coil settings due to cost burdens.

In addition, members of my team have reached out to Jersey Bus in London to learn more about hearing loops on buses. We learned they faced similar problems we did with our testing and used the same vendor Transportation for London (TFL) and the MTA used.

The MTA is continuing to explore innovative solutions to enhance communication with customers who are D/deaf or hard of hearing and move beyond the many limitations with hearing loops in our system. My team has taken part in the Transit Tech Lab Accessibility Challenge seeking technology that can enhance accessibility to better serve customers with disabilities. Through Transit Tech Lab, Acoustic Protocol Hearoes solution, which converts audio announcements into personalized, text-based messages to improve public transit accessibility for deaf and hard of hearing customers, was selected as one of the winners. However, similar to Bluetooth technology and hearing loops, there were major challenges with the technology operating as intended. Based on customer feedback, the vendor made modifications to the technology to ensure the technology would work as intended and benefit riders. This year, Metro-North Railroad conducted a pilot with the Acoustic Protocol Hearoes solution, which processed over

300 daily public announcements and automatically translated them to text. We continue to work with a monthly working group of over 30 transit agencies across North America to find solutions that have worked in other systems and have been focusing our research on speech to text technology, similar to that used in the Acoustic Protocol Hearoes. Please rest assured that me and my team are working to find a meaningful solution and will continue working with everyone necessary to find a meaningful solution and will continue until a solution is found the meets the needs of all our riders. If you would like to participate in future testing, let me know and we can add you to our list of testers. You can stay informed about opportunities for engagement with the MTA Systemwide Accessibility team, new initiatives or projects being worked on, and opportunities to test by signing up for our community mailing list https://groups.google.com/g/nyct-acta-community/.

Thank you for reaching out and I hope to work together to find a meaningful solution for the d/Deaf and hard of hearing communities.

However, Mr. Arroyo's statements were false. Ampetronic, from which I do not receive compensation, advised me:

Firstly, I would like to address the issues highlighted in subway stations. It is indeed true that electromagnetic noise in rail environments can reach elevated levels due to the intricate systems employed. This may be caused by older methods of system wiring, which may be addressable to improve the magnetic background noise.

When considering the effectiveness of induction loops in this environment, it's essential to also consider the acoustic levels during critical phases of rail travel. The heavy acceleration and braking phases, when current draw is at its highest, contribute to elevated electromagnetic noise from overhead lines. During these periods, it will also be acoustically noisy, which makes it challenging to deliver clear announcements via loudspeakers as well as hearing loops. Considering this, noise effects on the acoustic and magnetic audio systems will be comparably intermittent.

By measuring background noise across a station, it should be possible to find an area with acceptable background noise to allow an effective small area coverage loop to be implemented.

Despite these challenges, I would like to highlight the success of large area coverage loops implemented in various metro systems globally. Australia, for instance, has achieved up to 80% coverage on platforms.

As above it's important to commend NYC MTA's efforts in providing induction loops at passenger help points and ticketing counters, recognizing these as critical locations.

Moving on to the challenges with hearing loops on board buses, I would like to share insights based on our experience:

[Company] has successfully implemented solutions on board buses worldwide, including deployments on electric buses in the Netherlands and Scandinavia, with over 200 vehicles manufactured by BYD China. While older vehicles can present magnetic issues, sufficient coverage has been achieved in these vehicles to provide substantial benefits to end-users.

Considering wiring practices, it is possible to create an environment conducive to loop systems, especially if wired with a focus on compensating for electromagnetic compatibility (EMC).

During testing on an NYCMTA vehicle, while electromagnetic noise was present, we established a standard-compliant solution in a percentage of the vehicle. We can share our findings with your contact at NYC MTA if he has not seen these himself.

Operators like NYCMTA hold influence in pressuring vehicle manufacturers to design vehicles suitable for assistive listening technologies, as demonstrated across fuel types and manufacturers globally.

Furthermore, I would like to bring to yours and NYC MTA's attention the emerging direct-to-hearing aid technology, Auracast. Although not currently integrated into hearing aids, it is anticipated to be available over approximately the next five years. Unlike loops, Auracast is not as susceptible to EMC issues, presenting an opportunity for improved assistive listening technology. We are planning to demonstrate these systems towards the end of the year, with transport applications on the roadmap thereafter. I suggest exploring the possibility of piloting these systems with NYC MTA in the coming years.

I want to express our willingness to working collaboratively with the MTA Systemwide Accessibility Team to explore innovative solutions that cater to the unique challenges faced in subway stations and on-board buses.

As we navigate the intricacies of electromagnetic challenges and acoustic considerations, it becomes increasingly evident that collaboration is key to overcoming these hurdles. The magnetic interference and acoustically challenging phases during rail travel underscore the importance of not only adapting existing technologies but also advocating for systemic changes.

The most recent MTA email says:

Thank you for sharing this information with me.

As indicated in my response, our comprehensive research and testing conducted included information sharing and consistent communication from other transit agencies across the U.S. and across the globe, including, but not limited to agencies, from California, Canada, England, Singapore, and Australia. These fellow agencies have shared detailed information such as the standards and requirements vendors use to install hearing loop technology. The standards used by most of these agencies were the same as the standards the MTA and U.S. Federal regulators use to test loop technology on buses and subway platforms.

The transit agencies shared with us some the challenges they faced with the loop technology as well as the concerns their communities had with current loop technology. These agencies reported similar conclusions to what we found: there issues with outside interference, customers not hearing full announcements, and issues raised regarding current long-term maintenance of the loops were issues that could not be addressed. One of the components of maintenance raised as an issue is the yearly configuration vendors would need to do to ensure loops are working as intended are not being conducted. The lack of testing is causing issues the agencies are getting from their customers who are reporting the loop technology does not work as intended and that interference is significant. Another issue that was raised was the location of the loop technologies. For example, Australia's train cars are only fitted for loops in the priority seating area. If those seats are occupied, customers cannot use the setting effectively.

The maintenance issue stuck out to us because, the MTA operates the largest subway system in the world with over 6,500 train cars in service. BART indicated to our team during one of our monthly Transit Accessibility Working Group calls (joined by various transit agencies in North America) that out of their 782 train cars, roughly 100 cars have fitted with loop technology. This initiative has taken BART over five years to complete, and only now isa a comprehensive review is being conducted, with anticipated additional findings to be shared with us later this year. If the MTA was to add loops at a similar rate, it would take us decades to complete a full system rollout, and this would not account for the maintenance issues still not addressed by the current technology.

We know finding an effective solution for audio/visual information that can be used universally used is the path forward. From discussions with experts in this field, our customers, and fellow transit agencies, a more universal solution like speech-to-text is the future. Please do continue to engage with us on meaningful solutions for audio/visual information access that will benefit not only people with hearing loss but also people who are deaf, people who are blind, people who have low-vision, people with cognitive disabilities, tourists, and other riders.

The MTA has known about induction loops since 2008 or 16 years. During the Rail Committee meetings, the MTA ordered new LIRR rail cars without induction loops

despite rail companies on the committee stating they could provide rail cars with them. The MTA was sued for failure to add elevators for people who use wheelchairs and is now adding them over a set period. Yet the MTA is apparently unwilling to do the same for induction loops without a court order. Photos globally (please scroll down) show induction loops, and I saw the signage in Australia. Each MTA email has another set of excuses, but the MTA spent a fortune "roll[ing] out shiny, European-style trains" with wheelchair and visual access.

Meanwhile, the City of Los Angeles, which I worked with, has a different opinion, and San Francisco's BART added induction loops to its rail cars as seen below.

Amtrak, which was a Rail Committee member, ordered new rail cars with induction loops. Barcelona, Spain is added induction loops to its Metro.

The MTA initially did not include induction loops at the rebuilt Moynihan Station. In that case, a FOIA request revealed that the architect SOM recommended an induction loop, but the State of New York did not include it. Only when I submitted the FOIA request results did the state add the induction loops. I should not need to use FOIA for every project to prove that states and cities were aware of the access and could install what they claimed they could not.

Further, the MTA was able to overcome significant hurdles to add elevator access for wheelchairs after the MTA was sued. Prior to the lawsuit, the MTA refused to add the elevators.

Taxis

New York City's taxis added induction loops under former New York City Commissioner Daus. Mayor Bloomberg appointed me to the 2009 New York City Taxi of Tomorrow Stakeholder Committee, and the city added induction loops to its Nissan Taxi of Tomorrow taxis. However, an unrelated legal decision eliminated the Taxi of Tomorrow as the sole New York City taxi vehicle. Since the city tied induction loops to the specific taxi model, the city has effectively eliminated induction loops.

I filed another complaint, and after years addressing the issue, I received the following email:

> My name is Yesenia Torres, and I am the Accessibility Coordinator at the Taxi and Limousine Commission (TLC). I am contacting you in reference to your inquiry regarding induction hearing loops in NYC taxis. TLC is the government agency that licenses and regulates all taxis and for-hire vehicles in New York City. Through these rules our agency is working to eliminate discriminatory service refusals, increase vehicle accessibility, and assist financially distressed drivers.
>
> Title II, subtitle A, of the American with Disabilities Act (ADA) applies to public transportation services and protects qualified individuals with disabilities from discrimination in services, programs, and activities provided by State and local government entities. All TLC services provided to the public at our facilities are compliant with the provisions in Title II of the Americans with Disabilities Act (ADA).
>
> The manufacturer discontinued the vehicles which had an induction loop system incorporated into the vehicle. TLC does not have jurisdiction over the design of new vehicles. Therefore, in order to install an induction loop into a vehicle, the driver would be required to incur a significant expense. The ADA does not require taxis to have induction loops, but it does encourage providing communication access for people with hearing loss. To that end, TLC educates drivers, when they initially receive their license and upon renewal, how to interact and communicate with passengers who have a disability, including those who have hearing loss. We have revised the renewal course curriculum to include accessibility-related content, including many new AI-based video simulations. The new AI video simulations cover how to provide excellent customer service and direct communication to passengers who are hard of hearing or deaf. Other renewal course curriculum includes a new 20-minute video for TLC-licensed drivers on the ADA and driver responsibilities and new content on disability etiquette.

> Additionally, we have researched possible induction loop solutions for taxis without incurring a significant expense to drivers, who are still financially recovering from the pandemic and medallion crisis.

The New York City Taxi & Limousine Commission will not require induction loops in taxis without a mandate: “The ADA does not require taxis to have induction loops, but it does encourage providing communication access for people with hearing loss.” The TLC’s statement that “The new AI video simulations cover how to provide excellent customer service and direct communication to passengers who are hard of hearing or deaf” does not provide effective communication, and the statement demonstrates the agency’s ignorance of hearing access and hearing loss.

Meanwhile in Madrid, Spain, Azerbaijan, the United Kingdom, taxis (please scroll to taxis) added induction loops.

Finally, Uber and Lyft have no access for people who are hard of hearing and believe they too can evade hearing access by claiming the drivers are independent contractors. Yet, Uber and Lyft were required to add wheelchair accessible cars.

Two-Way Communication

Again, two-way communication needs an induction loop for people to hear and provide meaningful communication. Globally, induction loops are used in places including but not limited to call-boxes, intercoms, and elevators. (Please scroll to each respective section, including Banks, Elevators, Rail/Trams Further, videos should be available as well.)

Janice S. Lintz

New York City Transit added induction loops to call boxes under the previous administration.

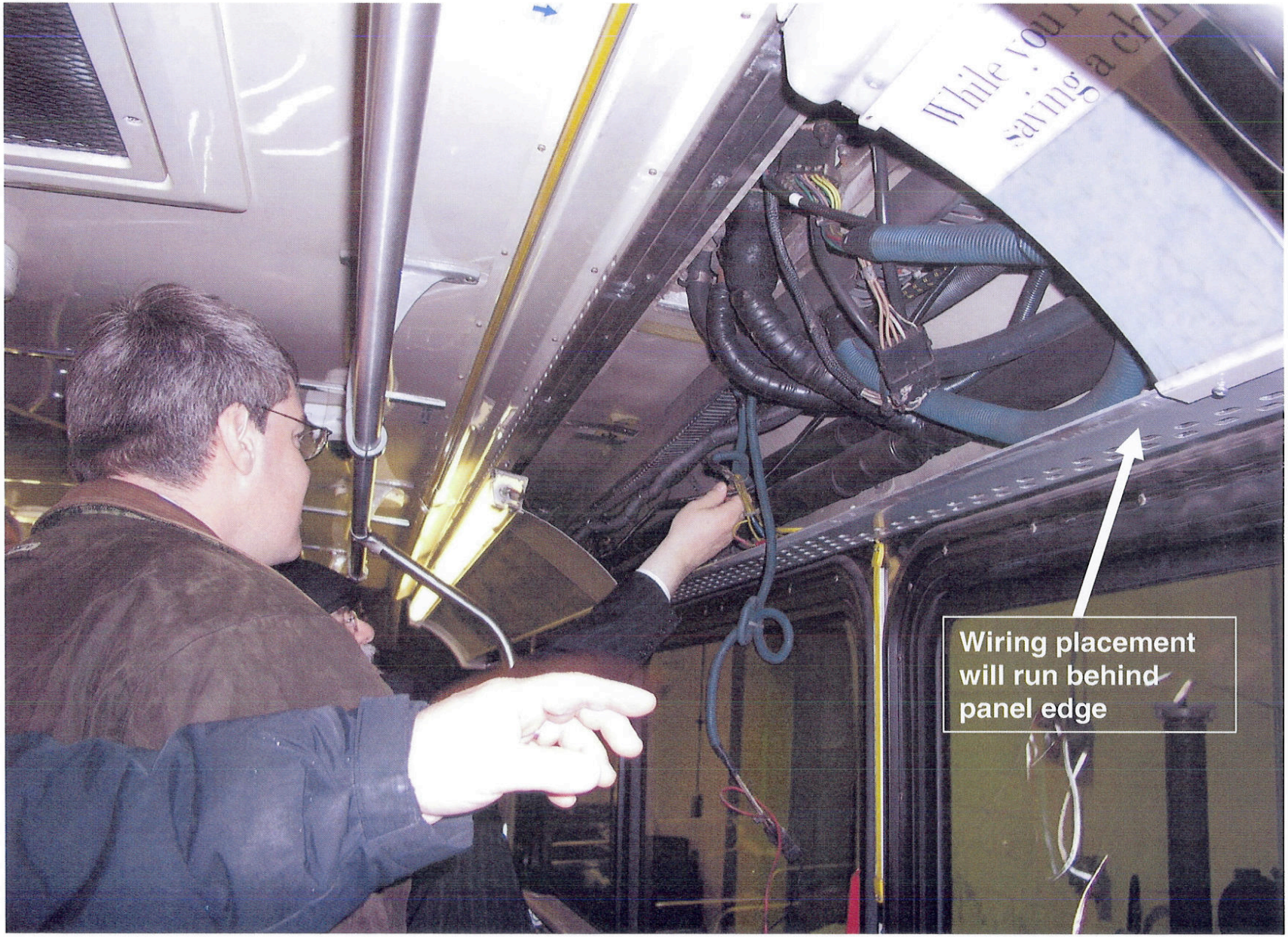
People who are hard of hearing need a clear effective communication definition that includes induction loops.
Thank you for your consideration.

Sincerely,

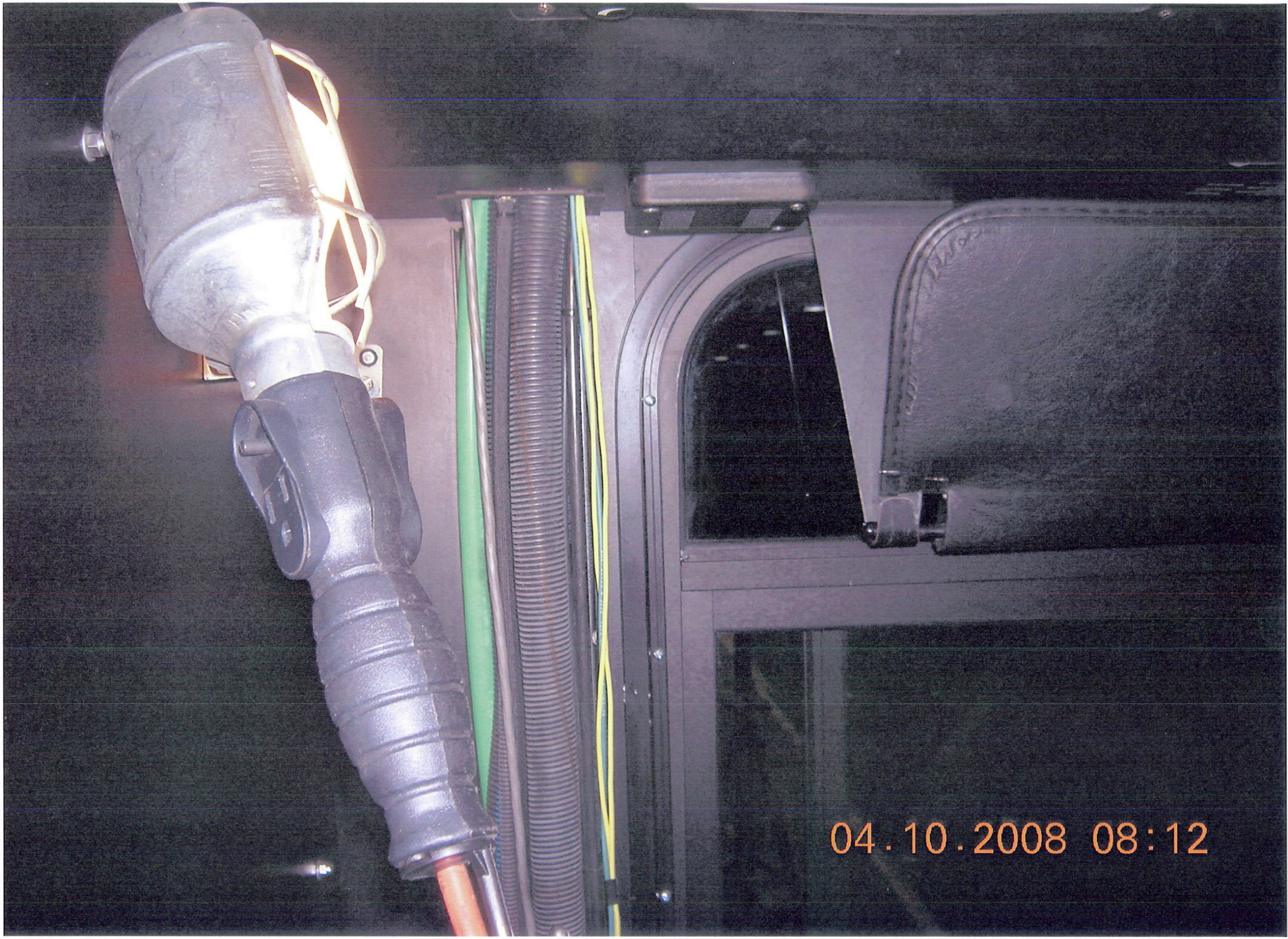
Janice S. Lintz, Advocate
2023 Presidential Management Fellow Finalist
2023 MA Senate Docket #923 Petitioner Presented by Senator Brownsberger
2022 Congressional Recognition by Congressmember Paul Tonko
2022 NYS Disability Rights Hall of Fame Inductee
2021 Cited in the Proposed FDA OTC Hearing Aid Regulations' footnotes
2018 Bill and Melinda Goalkeepers Foundations Partnership with TPG Recipient
2016 Aspen Institute Spotlight Health Scholar
2016 Nominated United State of Women Changemaker
2016 Acknowledged in the National Park Service Accessibility Guidelines (P76)
2008 People Magazine Hero

Ex A: 2008 NYCT Induction Loop Bus Pilot

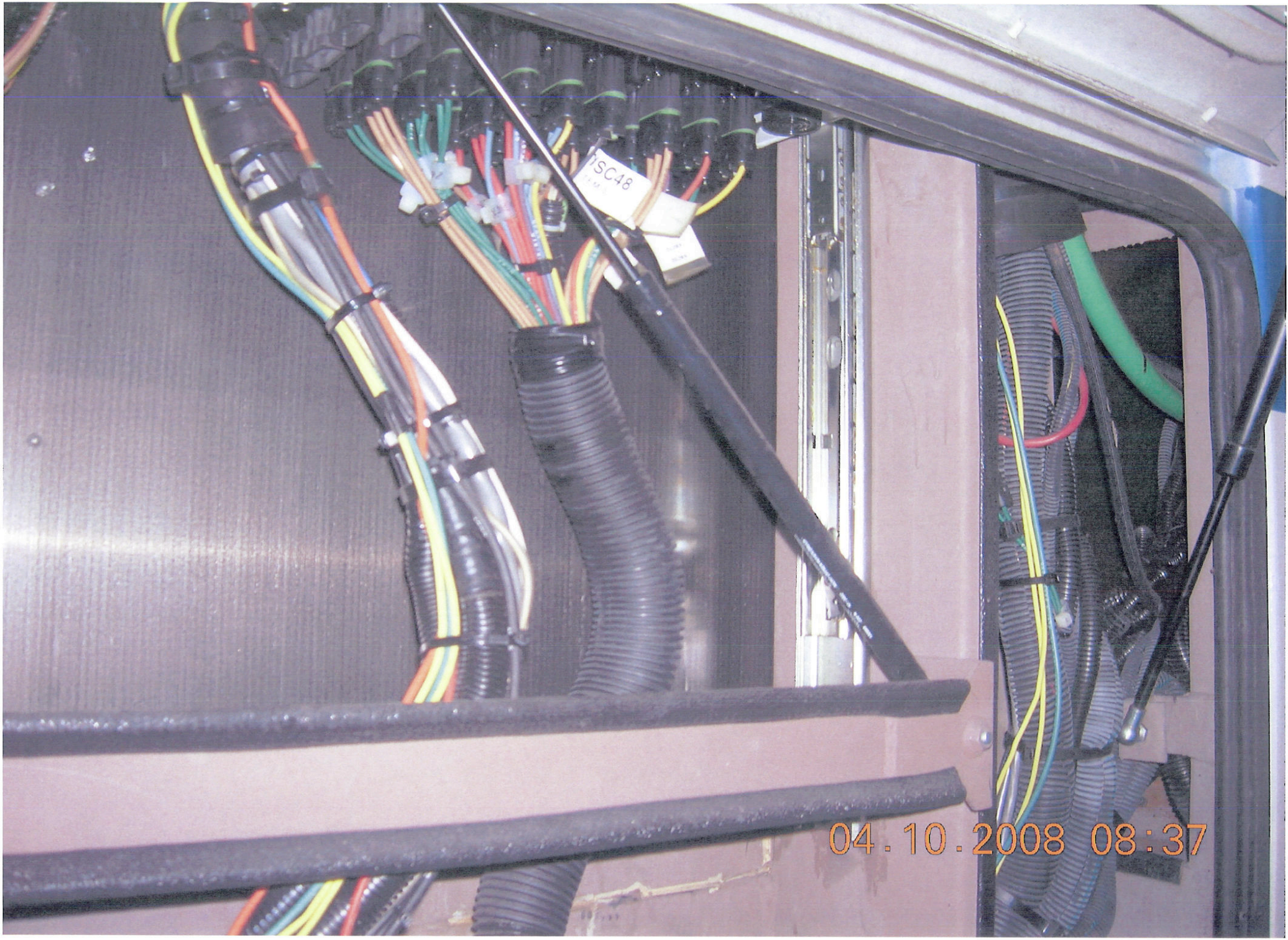
Panels will be removed for wiring

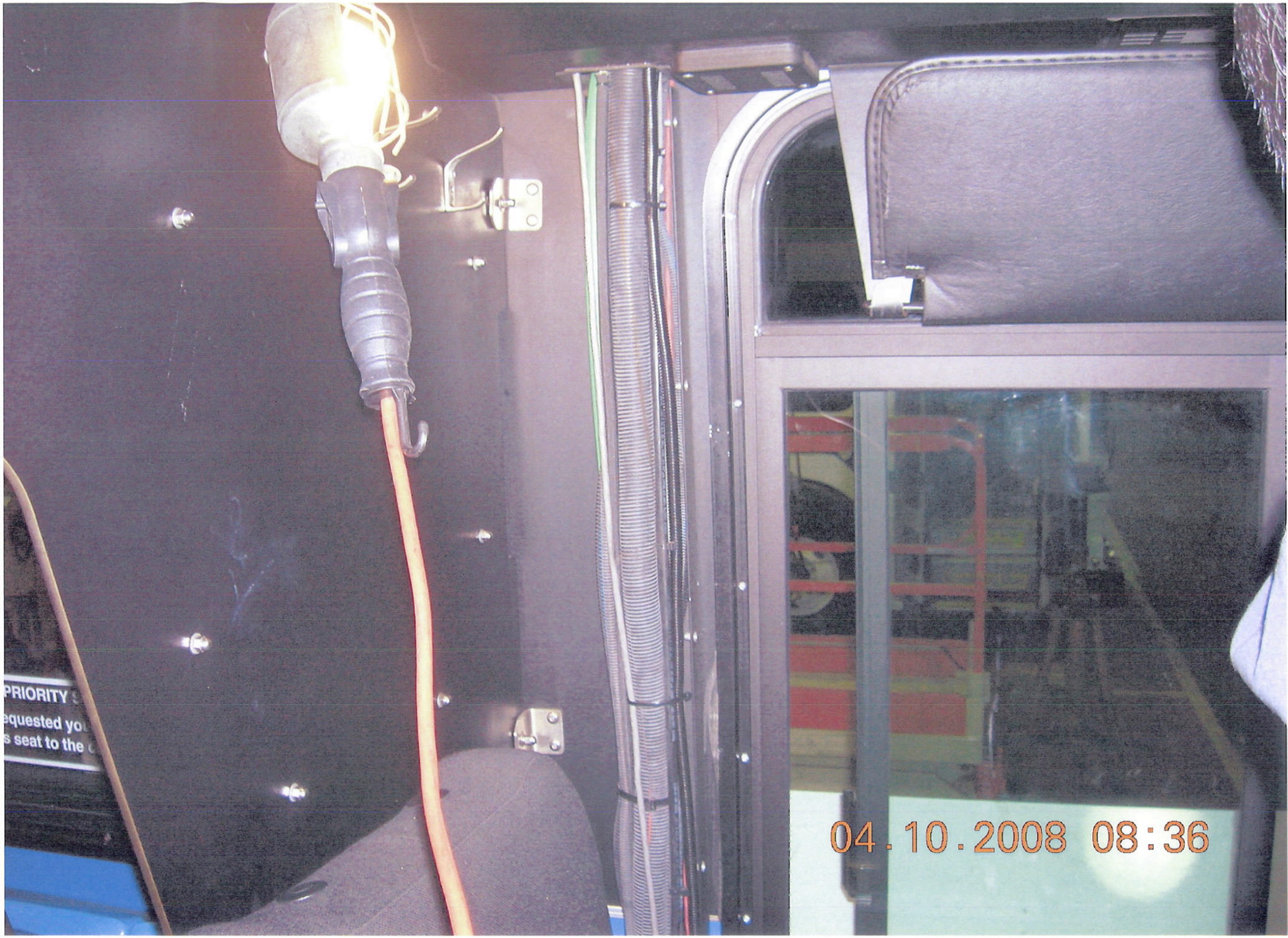


Induction Loop wiring location


04.10.2008 08:12


04.10.2008 13:50
Please
No
Littering
Smoking
Spitting


PSC48
04.10.2008 08:37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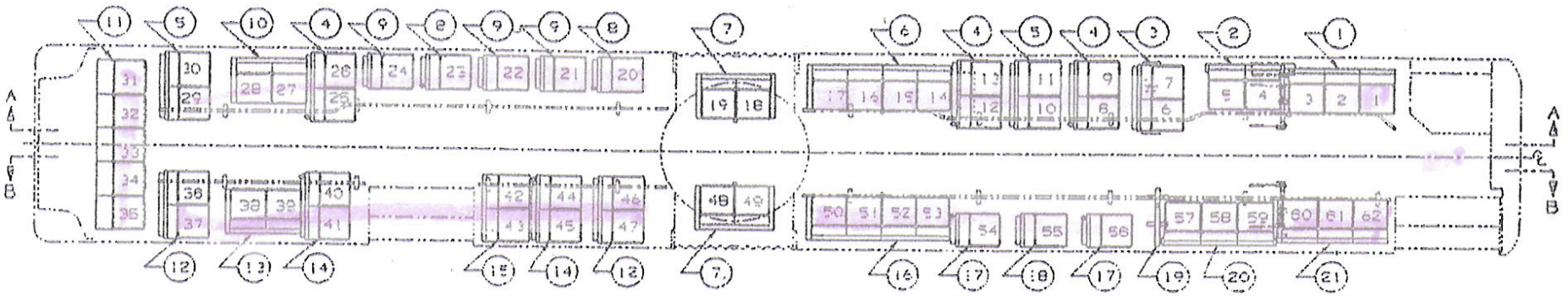
04.10.2008 08:36



ARTICULATED BUS

INDUCTION LOOP COVERAGE