
Journal of the

National

Academy OF

Forensic

Engineers[®]



<http://www.nafe.org>
ISSN: 2379-3252

Vol. XIII No. 1 June 1996

Americans with Disabilities Act & Its Effect on Legal Cases

by Robert T. Hintersteiner, P.E., (NAFE 327S)

Introduction

This paper will discuss the Americans with Disabilities Act (ADA) regulations, problems of compliance, and liabilities. Since the passage of the Americans with Disabilities Act (ADA) of 1990, the transit industry has faced numerous legal cases concerning compliance with ADA regulations by transit operators, violation of an individual's Civil Rights, and liability issues. The Federal Transit Administration (FTA) has required that each transit operator be in compliance by January 26, 1997,¹ and that each agency sign a Voluntary Compliance Agreement stating that it will be in full compliance by 2020.²

Under the ADA law, the United States Department of Transportation (USDOT) is required to enforce the regulations, which also includes the enforcement power to have all transit operators (agencies) comply with the *Civil Rights Act of 1964*, and the *Rehabilitation Act of 1973*. The ADA regulations require that all transit routes be accessible to the disabled by January 26, 1997. If they cannot, then they are required to provide a Paratransit Operation until they meet full compliance. In 1993, the USDOT finalized and published the *ADA for Paratransit Eligibility Manual, September 1993 (DOT-T-93-17)*, which determined compliance regulations for the transit industry regarding providing paratransit operations to eligible passengers.

These laws and regulations have created the following types of legal cases:

- Voluntary Compliance of each Transit Agency
- Violations of an Individual's Civil Rights
- Accident Liability

Voluntary Compliance Of Each Transit Agency

The USDOT under the ADA regulations has required that each transportation agency sign The Federal Transit Administration's *Voluntary Compliance Agreement (VCA)* to continue to receive federal funding. However, this agreement states that the transit agency is generally in violation (**NOT IN COMPLIANCE**) with ADA regulations, and that the transit agency agrees to be in

full compliance by a date agreed upon by both parties. The FTA has required this back door approach as an enforcement tool to achieve compliance among all transit agencies, and they set timetables for compliance.³ The opinion of the FTA is that a transit agency **may** be shielded from lawsuits by advocates if it complies to this agreement within the time agreed upon. If a transit agency does not sign this agreement, it is subject to formal enforcement proceedings by the FTA, which entails a detailed compliance review, until the FTA says that it is in compliance. The opinion of transit agencies is that the FTA regulations allow anyone to go to court with no burden of proof, except a copy of the VCA.⁴ A number of transit agencies have protested the proposed agreements by rewriting key sections, and by not admitting to any liability. The New York City Transit Authority (NYCTA) is one of these agencies that admits to **no wrong doing**, and has removed the following sections from its VCA:⁵

- "... fully allegations of noncompliance to determine if there is reasonable cause to believe there is a failure to comply."
- "Based on information provided by (property) the FTA has determined that reasonable cause exists to believe that the (property) is in noncompliance with the key stations provisions of ADA."
- "Breach of this agreement is cause for the FTA to begin formal noncompliance proceedings."
- "The FTA will continue to monitor the (property) for a minimum of two years to ensure continued compliance ... In addition, the FTA may initiate a compliance review at any time."

Within six months after the Massachusetts Bay Transportation Authority (MBTA) signed its VCA,⁶ it was served with a civil rights class action suit by the Disability Law Center of Boston for not being in compliance based upon its VCA.

The ADA regulations are divided into four separate transit operational sections, and each division has its own compliance requirements, as follows:

- Rail Systems
- Over The Road Bus (OTRB) Systems
- Fixed Route Systems
- Paratransit Systems

Rail Systems

The ADA regulations require that all rail transportation vehicles that are purchased, leased, and/or remanufactured shall be accessible to the disabled. All station platforms shall be accessible by the year 2020. To provide interim accessibility to all rail stations with low level platforms, the "One Car Per Train Rule" shall be operational by 1995. The "One Car Per Train Rule" is a regulation that requires every train to have one rail car that is accessible to the disabled. Some older transit systems cannot be in full compliance by the year 2020, due to the size of the systems, and economic cutbacks by federal,⁷ state, and local governmental agencies. The transit agencies can file for an "undue financial burden waiver" from the FTA Administrator.

Over The Road Bus (OTRB) Systems

The ADA regulations require that all OTRB buses be equipped with wheelchair lifts and securement devices. An over the road bus (intercity bus service) is characterized by an elevated passenger deck located over a baggage compartment. All new and leased buses to be used in excess of five years shall be in compliance, but existing buses do not have to comply at this time. Currently, the USDOT and FTA have not drafted regulations on compliance for over the road buses.

Fixed Route Systems

A fixed route system is a service for providing transportation of individuals (except aircraft) on vehicles operating along a prescribed route and time schedule. All new and leased buses must be in compliance, or a demand responsive system must be provided, until the fixed route system is in full compliance.

Paratransit Systems

Paratransit is a demand responsive system where individuals are picked up from their homes and taken to their destination and back within a confined service area. Many systems have reduced the door to door service to curb to curb service, due to the increasing demand for this type of service. For a disabled person to use this type of paratransit service, that person must be prequalified, and make a reservation at least 5 to 14 days ahead to use the service. The average cost per one-way trip is \$15.00, and it ranges from \$0.75 to \$28.00 depending on the transit operator.⁸ The operator recovers only \$2.50 per trip under the federal funding program. Before the ADA, there were about 20 million trips per year (including senior citizens). That has increased to 40 million trips since the law was passed (including only qualified disabled senior citizens). The industry expects the number of trips to increase to 48 million by 1997. With about 50% of the nation's buses accessible, the operating budgets of many cities are financially burdened over the spending of up to 10% of their budgets for less than 1% of the trips.⁹

Violations Of An Individual's Civil Rights

The United States Department of Transportation, in compliance with the *Americans with Disabilities Act of 1990*, the *Civil Rights Act of 1964*, and the *Rehabilitation Act of 1973*, requires that a paratransit operator cannot violate the civil rights of a passenger, even if it violates current safety requirements. The FTA states that the ADA **does not require** a passenger to be seatbelted, and that a person must be asked first if he or she wants to be seatbelted. However, the mobility device must be secured while the bus is in operation. If a person wants to alight or disembark at a hazardous location, the transit operator must comply. Also, if an individual wants to stand on the lift over the objection of a transit operator who is concerned about that person's safety, the FTA and the courts have ruled that the person has the right to stand on the lift.

Since the passage of the ADA regulations, advocates are utilizing the Civil Rights Act to improve service for the disabled at a faster rate, and also to make demands regarding personal needs and preferences. The transit operator must provide the service to each individual qualified to ride the paratransit service, while providing safety. The crutch of the problem is to resolve a situation when a service is demanded in an area or manner that the transit operator deems to be unsafe.

The Problems

Transit operations must conform to procedures in the following areas in order to be in compliance with the ADA and the Civil Rights Act:

- Fixed Route Operations
- Paratransit Operations/Prequalifications
- Safe Boarding and Alighting
- Lift Safety Procedures
- Wheelchair Securement Devices
- Mobility Devices
- Seatbelts
- Warning Devices for the Blind

Fixed Route Operations

All buses must be equipped with a wheelchair lift and wheelchair securement devices. If they are not, then they are not in compliance with the ADA regulations, and they must provide an operational paratransit service by January 1997. In addition to the buses being accessible, the bus stops must also be

accessible to the disabled. Bus stops are under local jurisdiction and they do not come under the same compliance regulations.

Paratransit Operations/Prequalifications

For a disabled person to use a paratransit service, he or she must prove that the local bus stop is not accessible, and that the person's disability restricts him or her from using the existing fixed route system. For a disabled person to qualify, he or she must fill out a 10 to 20 page detailed medical form¹⁰ for review by a qualifying committee. The FTA, using the *ADA Paratransit Eligibility Manual*,¹¹ requires that each transit agency must first determine the eligibility of each disabled person to use its paratransit system. The transit agency can employ the following professionals to be on the eligibility committee:

- **Clinical Social Workers** – Persons who investigate mentally and emotionally disturbed persons.
- **Independent Living Specialists** – Persons who give special education and training programs to persons with disabilities to help enable them to perform the activities of daily living.
- **Occupational Therapists** – Persons who treat individuals who have limited physical injury or illness, and developmental or learning disabilities.
- **Physiatrist** – Physicians who test physical functioning and help establish a disabled person's rehabilitation program.
- **Physical Therapists** – A person licensed to help in examining, testing, and treating individuals with disabilities through the use of special exercises.
- **Rehabilitation Specialists** – Persons who help individuals regain normal functional capabilities after a disabling disease or injury.

The following professionals determine and verify the extent of an applicant's disability:

- **Audiologists** – Professionals that determine the extent of hearing loss.
- **Ophthalmologists** – Professionals that determine the extent of visual loss.
- **Physicians** – Professionals that determine the extent of health disabilities.
- **Psychologists** – Professionals that determine the extent of mental disabilities.

Persons with the following types of physical disabilities may be considered eligible to ride a paratransit system and/or capable of using a fixed route system depending on the extent of their disability:

- **Temporary Disabilities** – i.e. broken leg, recent operation, etc.
- **Functional Impairment** – i.e. tuberculosis, radiation/chemotherapy, dialysis, arthritis, epilepsy, incontinence, temperature sensitivities, cardiac, pulmonary, HIV, etc.
- **Severe Lack of Coordination/Motor Function** – i.e.. cerebral palsy, quadriplegic, brain/spinal/peripheral nerve trauma, neurological conditions, paraplegic, amputee, arthrogryposis, spina bifida, multiple sclerosis, etc.
- **Profound Mental Retardation**
- **Visual Impairment** – i.e.. blindness or restricted vision.
- **Communication Disabilities** – i.e.. reading, speech, or hearing.

Safe Boarding and Alighting

One of the greatest safety issues arises during the time when a disabled person enters or leaves a bus. The accessibility lift was designed for mobility devices, and individuals with walkers, canes, or crutches are expected to enter and leave the bus by their own power using the steps. The following discusses the safety aspects of boarding and alighting from a transit vehicle lift system:

Standing On The Lift:

A person who has crutches, a walker, or a cane can demand to use the lift. If the operator denies a person the use of the lift because there is no way to secure the individual who is standing up from falling when the lift is moving, then the individual can sue on the basis that his Civil Rights have been violated. If a person falls while the lift is in motion, the individual can sue for injuries. This type of situation actually occurred to the DAVE Transportation Services, Inc., in Toledo OH, when a 400 pound woman could not be lifted with her mobility device, since the mobility device was too large and heavy for the lift. After much discussion with the FTA, and other agencies, they let her stand on the lift holding onto the railing. The civil rights issue was solved by giving her transportation and letting her stand on the lift. The question that was not addressed by the FTA was what would happen if she lost her balance while the lift was in motion, and she started to lean on one of the side supports. Would the side railings be capable of holding a load at the top of the railing in excess of 1,800 foot lbs. moment (400 lbs x 3 feet x 1.5 safety factor)? Figure 1¹² shows different types of lift systems and their side supports, which are designed to aid and give a sense of security to the person in the mobility device.

Accessibility of the Lift:

The FTA requires that the lift shall be used at all stops unless the lift will be damaged during operation. The condition of the bus stop area is not a consideration in the use of the lift. Lift operation can be divided into two areas: lift accessibility and sidewalk accessibility.

Lift Accessibility:

Lifts are designed to lift a mobility device onto and off a bus, and the bus driver must exit the vehicle and walk to the lift to operate it. Since these lifts are cantilevered, the entire weight of the lift and the mobility device will force the platform to bend or tilt away from the bus. Each lift should have a backstop to prevent the mobility device from sliding or rolling off the lift (see Figure 1). The brakes on each mobility device must be employed while the lift is in motion. Many paratransit operators require that the mobility device be backed onto the lift so that the mobil-

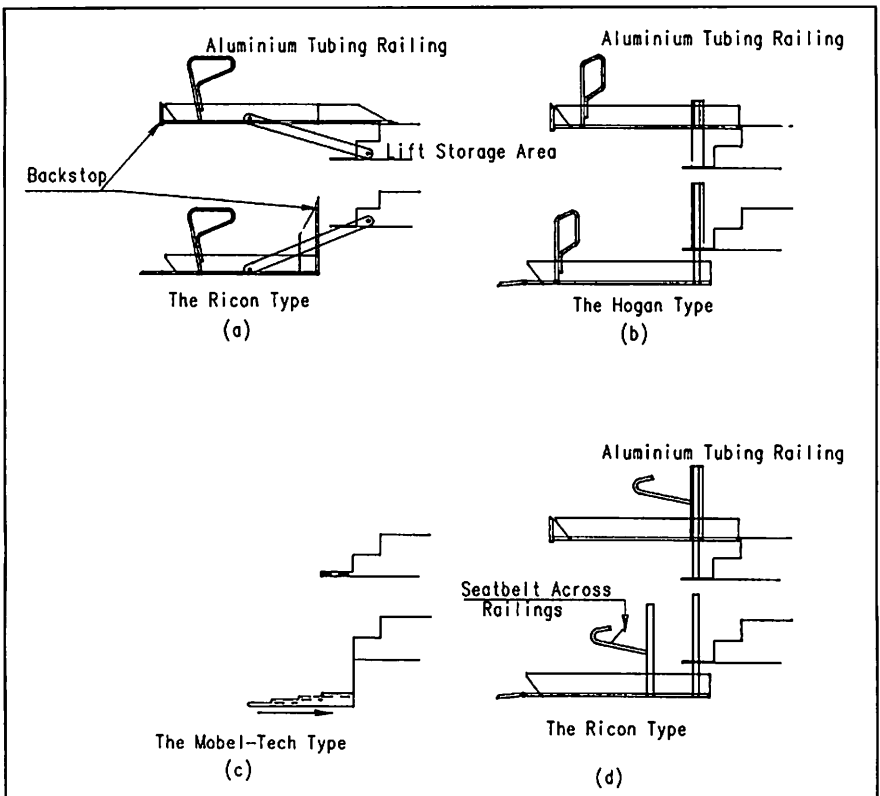


Figure 1
Lifts

ity device can be maneuvered onto the bus. In addition, the weight of the mobility device also should be toward the inside of the bus.¹³ The size of the lift is 30 inches by 48 inches at a distance of 2 inches above the platform, with a maximum rated capacity of 600 lbs.,¹⁴ and the platform itself need be only 28.5 inches wide.

Sidewalk Accessibility:

In urban areas the bus must pull as close to the curb as possible.¹⁵ However, in many suburban and rural areas there are no sidewalks or paved bus stops. These bus stop areas can be located along the side of a highway within a drainage ditch or along rock or grass slopes extending from the edge of pavement or narrow shoulder. The North San Diego County Transit District¹⁶ has many bus stops that have inadequate space for wheelchair maneuverability. To illustrate a case in point, Seattle Washington has at least 702 of these types of bus stops located in areas that are not considered safe for persons with disabilities. These types of bus stops are divided into the following three categories: short sidewalk width, no sidewalk, and sidewalk with a steep grade.

Short Sidewalk Width:

The lift length is 48 inches and it extends at least 48 inches out from the bus. The length of a typical mobility device is about 45 inches. Therefore, at least 4 feet would be required for the mobility device to maneuver onto and off the lift. Seattle Metro recommends that the minimum sidewalk width adjacent to a taxi or bus loading zone¹⁷ be 12 feet, with an unobstructed space of 8 feet from the curb (see Figure 2).

No Sidewalk:

In areas along a highway the shoulder lane can be 2 feet to 12 feet wide, followed by a drainage ditch. The lift cannot be operated in these areas even though this area has been designated as a bus stop. Examples of poor bus stops in drainage areas followed by steep slopes are shown in Figure 2.

Sidewalk With A Steep Grade:

The FTA requires that the lift must be used at all bus stops unless it may cause damage to the lift. The lift's base is parallel to the floor of the bus and also the roadway. Therefore, if the roadway grade is at an X% grade, than the bus lift will also be at the same slant (percent of X) (see Figure 2(e)).

An incident occurred at a bus stop with a street grade of 18%, on a short cross street and between two level arterials, in the central business district of Seattle, Washington. The person in the wheelchair insisted on

being let off at this particular bus stop over the objections of the driver. As the person in the wheelchair left the lift, he did not grab the side grips of the wheelchair fast enough, and the wheelchair started free-wheeling down the sidewalk heading toward the main arterial roadway. About the end of the grade, the person in the wheelchair grabbed a street light pole and hugged it, to avoid entering the main arterial. However, this person sued for injuries, and won for being let off at an unsafe location. The FTA still insists that the civil rights of such a person must be complied with over any liability issue. The bus could not alight this person at the level intersection, since the bus would have blocked the main arterial for at least 2 to 4 minutes to unhook the wheelchair and to operate the lift. It takes 50 seconds for a complete cycle of the lift. Extra time is required for the bus driver to leave his seat and unhook the wheelchair and return the seat back to normal, return to his seat to operate the lift, and then for the wheelchair to board and alight the lift.

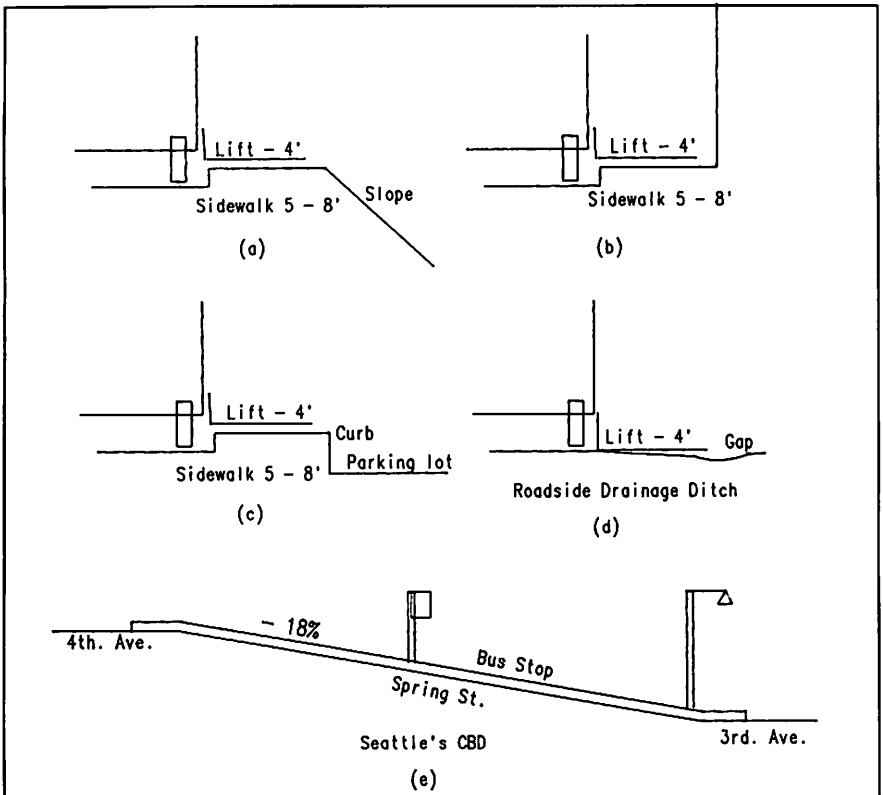


Figure 2
Sidewalk Conditions

Lift Safety Procedures

Lift safety has evolved into two issues: securing the mobility device to the lift while it is in motion, and should the bus driver ride the lift with the mobility device.

Lift Securement Devices:

While the lift is in motion, the mobility device must have its brakes on, and a roll stop must be operational while the lift is off the ground. The issue many transit operators are debating is the proper securement of both the mobility device and rider during lift operations (see Figure 1(d)¹⁸). To secure a disabled person with external belts requires that the mobility device also be secured. The FTA does not require the use of seatbelts, nor securing the mobility device to the moving lift. To secure the mobility device to the lift adds extra time to the run, and transit agencies have been sued by other passengers saying that their civil rights were violated, because of the time delay, missed appointments, etc. Securing the mobility device and also the rider have not proven effective, because of the time it takes to install and remove the securement devices, and the variety of the types of securement devices required.

Driver Riding the Lift:

If the lift is located at the front door, then the driver can operate the lift from his seat. However, if the lift is located at the rear door, then the driver must operate the lift from inside or outside the bus. If the driver operates the lift from outside the bus, then he has to enter the bus through the front door to move the person off the lift, and then tie the person down in the securement device. Some transit systems forbid the driver from riding the lift with the mobility device, because if the lift fails, then both persons could be injured, and there could be no one available to give assistance or call for help.

Wheelchair Securement Devices

There are many types of wheelchair securement devices on the market, and they range from locking the wheels to the floor by means of wheel hooks, to securing the chair by using straps (see Figures 3 & 4¹⁹). All these systems require that the disabled person face forward. The Society of Automobile Engineers has proposed design standards for Wheelchair Tiedowns and Occupant Restraints Systems (WTORS)²⁰ (SAE J2249) for frontal collision, which can be manually released by a single attendant without the use of tools. ANSI/RESNA²¹ are also proposing standards for the placement of anchorage points on manual wheelchairs, powered wheelchairs, power-based wheelchairs, three-wheel scooter-type wheelchairs, tilt-in-space wheelchairs, and specialized mobile seating bases with removable seating inserts. These securement devices

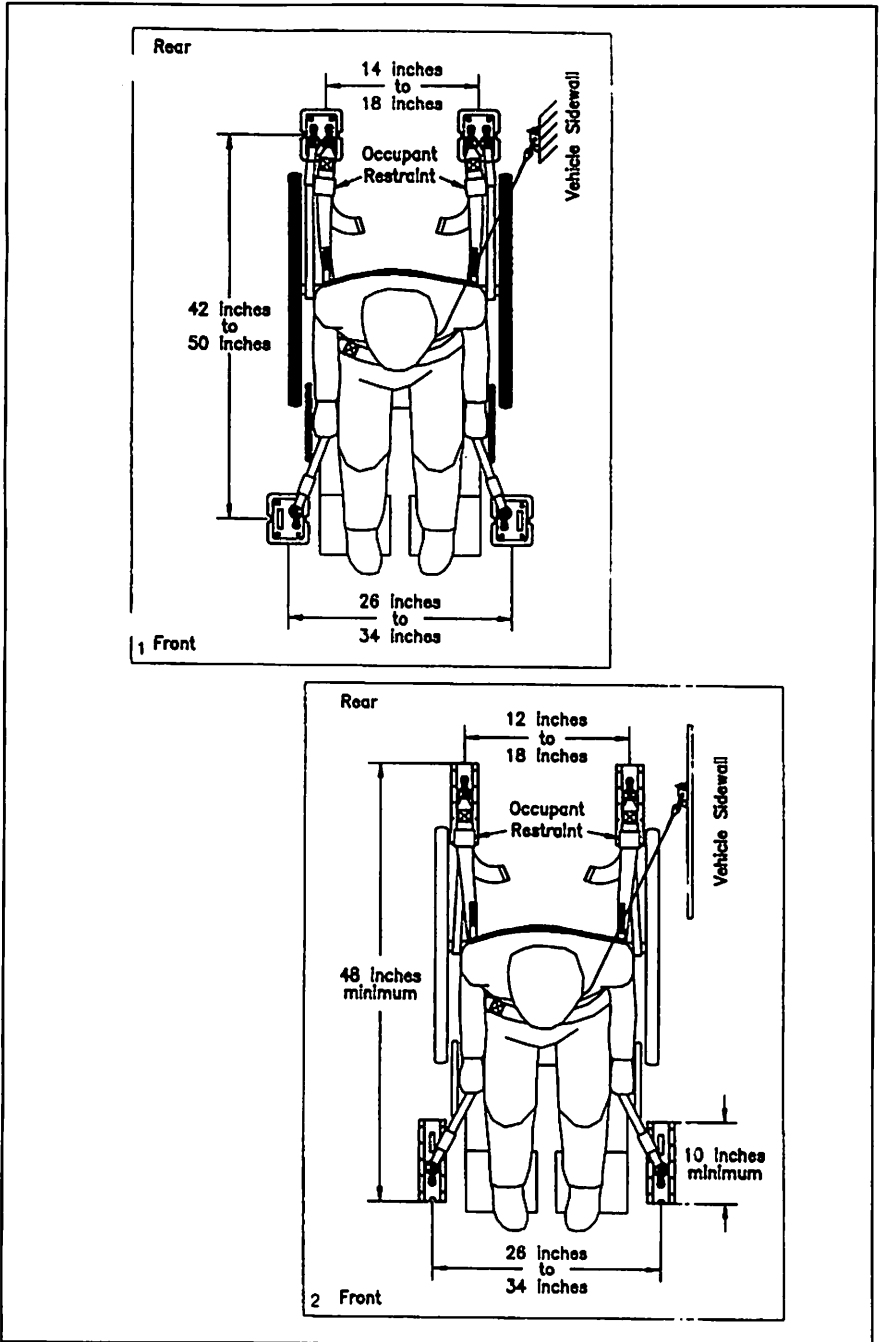


Figure 3

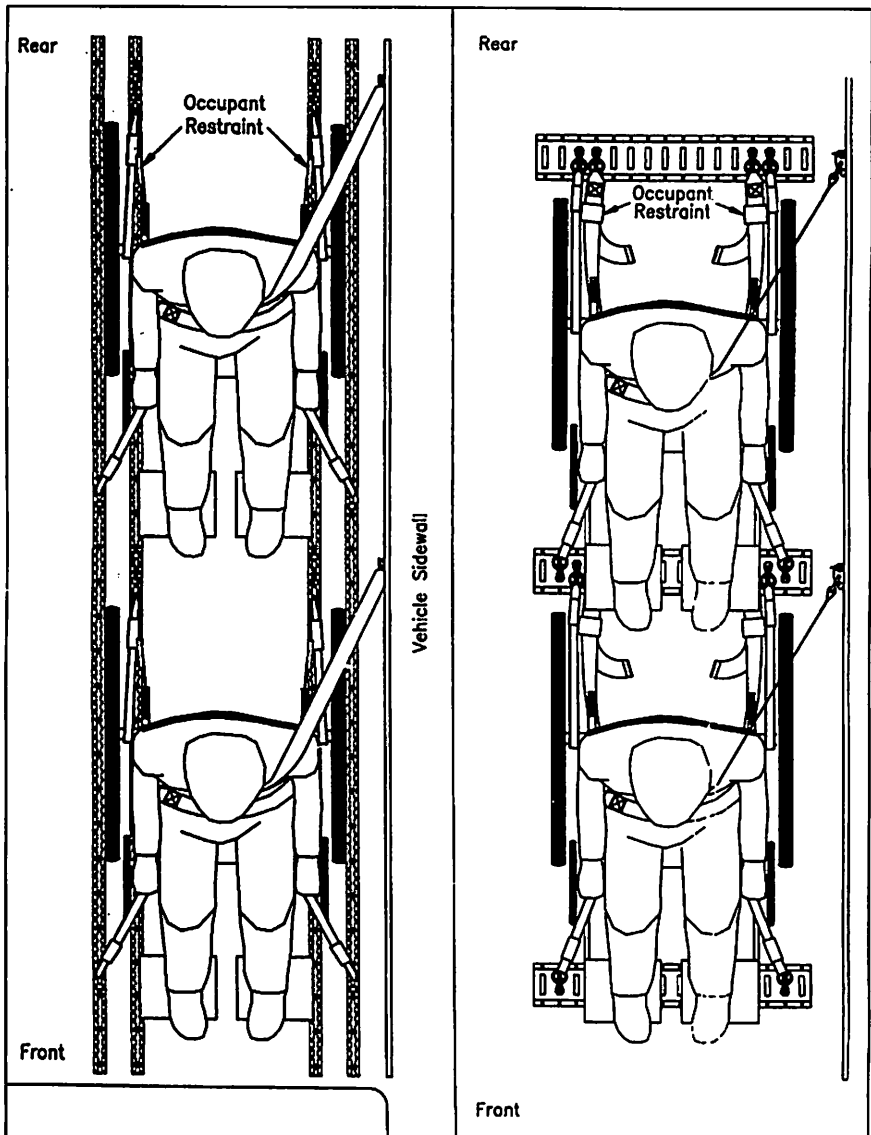


Figure 4

all require three or four point tiedown. Three wheel scooters must be secured in order to not tip when it leans to the side during a turn. In addition, the passenger located in the wheelchair must also be secured by means of a seatbelt attached to the mobile device or to the bus. The FTA requires only that the mobility device be secured while the bus is in motion.

Mobility Devices

Mobility devices range from manually powered wheelchairs to four wheeled (see Figure 4) motorized scooters. The aisle space in a bus must be at least 28 inches wide to accommodate a wheelchair 25 inches in width, as measured from the outside of the hand grips. The typical aisle width for buses ranges from 21 to 31 inches.²² Therefore, the mobility devices frequently must remain in the back or front of the bus depending on the lift location. For a bus to accommodate two mobility devices, one behind the other, the total required distance is 8 feet, since the length of a wheelchair is about 43 inches. The same dimensions also apply to three wheel motorized scooters. The width of a minibus varies from 6.5 to 8.0 feet, and for standard buses the width is 8.5 feet. The ability of a mobility device to maneuver within the bus is limited since the distance between the longitudinal seat is 3.5 feet for an 8.5 foot wide bus, and less for a narrower bus. Therefore, bus operators require the mobility devices to enter backwards. A new problem that faces transit operators is cheaper imported types of wheelchairs and mobility devices that are wider than the standard ones made in America and Canada. Many of these types of imported mobility devices cannot be secured, and the FTA says that you still have to provide transportation²³ and secure them if they get onto the bus. The Canadian Standards Association (CSA) is proposing certification standards for each mobility aid as to "suitable for transportation in moving motor vehicles of up to 10,000 kg" (4,545 lbs.).²⁴ The configuration of the bumpers, wheelie bars, and platform shape²⁵ on some scooters longer than 45 inches may not fit into most buses. Three wheeled scooters operate more easily than four wheeled scooters in buses due to a smaller turning radius.

Seatbelts

There are two types of seatbelts available on a bus. The conventional lap seatbelts located in each seat, and the special seatbelts used to secure the person in a mobility device. The ADA does not require a disabled person to wear a seatbelt if the transit operator does not require all passengers to wear seatbelts. Therefore, under the Civil Rights Act, a disabled person can refuse to wear a seatbelt, even if the safety of the disabled person necessitates one. Madison Metro in Wisconsin had a case in which a woman had virtually no control over her physical body and who slid out of her seat every time the bus turned quickly. She refused to wear any type of seatbelt, and has filed 12 claims, with four still outstanding.²⁶ Seatbelts and harnesses are provided by transit operators for wheelchair and scooter users, but the standard seatbelts and harnesses will affect each person differently. Many individuals refuse the shoulder harness and lap seatbelts as being too restraining or touching the person inappropriately. An amputee or a person with a lack of ability to hold himself or herself in a chair should be advised that they ought to be secured while the bus is in operation to avoid slipping out of the chair. The ADA and FTA require that a mobility

device be secured to the floor of the bus by a three or four point system. However, the individual using the mobility device is not required to be secured, and the driver can only suggest that they be secured.²⁷

Table 1
 Scooter Specifications

Lark of America - Spec.	Lark 4 Plus	Lark 3	Travel Lark
No. of Wheels	4	3	3
Size Length	41" to 46"	42" to 46"	36" to 41.5"
Width	23.75"	22.75"	22.5" to 28.5" (w/Rear Wheels Ext.)
Speed Forward	Up to 5.5 mph	Up to 5.5 mph	Up to 3.5 mph
Reverse	Up to 3.4 mph	Up to 3.0 mph	Up to 1.5 mph
Max Weight Cap.	360 lb.	360 lb.	200 lb.
Unit Total Weight	161.5 lb.	144.5 lb.	99.0 lb.
Dist. Per Battery	22 miles/charge	22 miles/charge	12 miles/charge
Turning Radius	Frame/Inside/Outside	Frame/Inside/Outside	Frame/Inside/Outside
Min.	41" / 7.12"/32.75"	42"/5.5"/25.5"	36.0"/0.0"/21.5"
Max.	46" / 9.12"/34.75"	46"/7.0"/27".0"	41.5"/0.0"/24.5"
Electric Mobility - Spec.	400	240	Little Rascal
No. of Wheels	4	3	3
Size Length	50"	46"	36.5"
Width	25"	25"	20"
Speed Forward	Up to 5.0 mph	Up to 5.5 mph	Up to 5.5 mph
Reverse	Up to 5.0 mph	Up to 5.5 mph	Up to 5.5 mph
Max Weight Cap.	450 lb.	400 lb.	250 lb.
Unit Total Weight	181 lb.	162 lb.	143 lb.
Dist. Per Battery	20 miles/charge	20 miles/charge	20 miles/charge
Turning Radius	66"	37"	30"

Source: Lark of America & Electric Mobility Corp.

Warning Devices For the Blind

Detectable Warning Devices are used on transit platforms to warn blind persons of the location of the edge of the platform. These warning devices are 18 inches wide and have dome protrusions. The FTA has not approved that any specific type of warning device be used, but it is suing transit operators all over the country for not being in compliance by not installing detectable warning devices. The FTA is also suing for noncompliance transit agencies that are still using detectable warning devices that were installed prior to ADA regulations (see Figures 5²⁸). There have been liability suits by non-blind persons, for tripping on the FTA proposed dome type of detectable warning device. Two types of civil rights suits have been filed: one for drivers to call out each bus stop, and the other to stop the calling out at each bus stop. The FTA requires that all drivers must call out each bus stop to be in compliance. This regulation covers a blind person and a person who can read.

Professionally Trained Service Animals (PTSA):

Professionally trained service animals require professionally trained service animal identification cards, which are issued by each transit system²⁹ to a blind person using a seeing eye dog. A special PTSA card was issued to a blind passenger who was both blind and allergic to dog hairs. The PTSA card was issued for a specially trained pig, which was permitted to ride the NYC transit system³⁰.

Certified Seizure Alert Dogs (CSAD):

Service animals are also used by persons with epilepsy. There are about 900 trained certified seizure alert dogs nationwide. The dogs are trained to alert the person of a pending seizure at least 10 minutes to hours before a spell occurs.

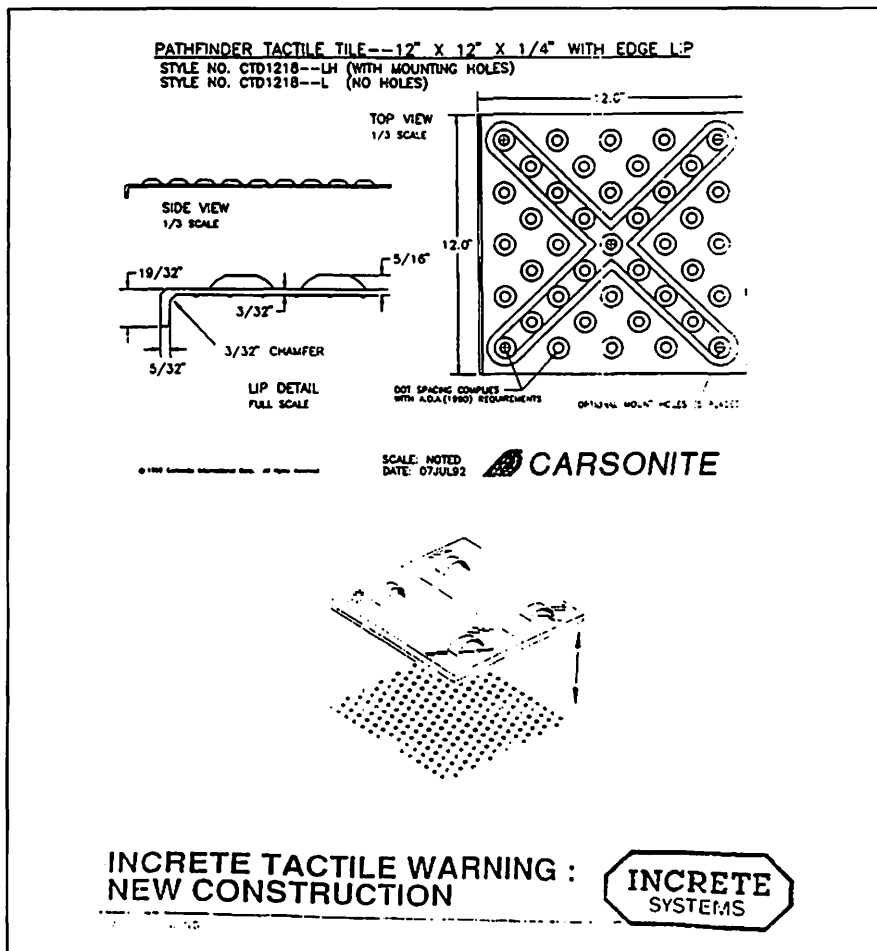


Figure 5

Liability

Liability to the transit operator comes in two forms: cases brought by individuals and/or advocate groups based on civil right violations, and accidents. The following list highlights the general areas of concern, which are self-explanatory:

Civil Rights Violations:

- Individual Need for Paratransit Service
- Scheduling of Trip Length
- Trip Length
- Stop Locations
- Seatbelt Usage
- Environmental Conditions on Bus
- Late Pickup
- Inadequate Service
- Noncompliance with the VCA

Accident Liability:

- Vehicle and Lift Maintenance
- Background Check of all Employees
 - Criminal Record
 - Emotionally Suitable for the Job
 - DUI Convictions Record
 - Accidents Record
 - Speeding Record
 - Pre-employment Drug Test
 - Pre-employment Alcohol Test – Courts ruled against test³¹

Employee Training:

- Equipment
- Procedures of Using Lifts
- Sensitivity to Different Type of Disabilities
- Calling Out Stops

Supervision:

- Scheduling of Trips
- Reporting Defects
- Review of Complaints by Passengers
- Courtesy to Passengers
- Handing of Mobility Devices
- Securement Procedures
- DUI - Breath Check Before and After Each Shift
- DUI - Drug Test Randomly Throughout the Year

Operational:

- Use of Lifts
- Securement of Mobility Devices
- Safety Procedures

Update

There is an update (Source: TD Volume 4 No. 9 May 22, 1996) to Seattle Metro's request to refuse to let the disabled off at unsafe locations. The USDOT stated that a property cannot refuse to deploy a lift because of safety concerns for the same reason that a transit provider cannot deny a three-wheeled scooter user transportation, or stop a disabled person from standing on a lift. In short, the Justice Department and the Department of Transportation have ruled that a service can only be denied if it is a "**direct threat**" to that individual, not that the situation or location is a safety concern. According to 28 CFR36.208(b)-(c): "*Direct threat means a significant risk to the health or safety of others that cannot be eliminated by modification of policies, practices, or procedures, or by the provision of auxiliary aids or services.*"

Conclusion

Since the passage of the ADA in 1990, the advocate groups for the disabled have become more demanding, and the need for services has increased. The transportation of the disabled has become a major industry throughout the United States and Canada. It presents a number of challenging problems that a Forensic Engineer may become involved in, on both sides of the issue, in an effort to make the system safer for all passengers.

References

1. ADA for Paratransit Eligibility Manual in 1993 (DOT-T-93-17)
2. American with Disability Act (ADA) of 1990, Section 37-227
3. TDSR (Transportation of Disabled) Access & Safety Report, Serif Press, Inc. Vol. 3, No. 8, 04/19/95, statement by Trudy Levy, Esq., FTA Associate Chief Counsel
4. TDSR, Vol. 3, No. 8, 04/19/95, statement by Mary McCorry, Esq., Special Counsel NYCTA.
5. TDSR, Vol. 3, No. 10, 05/17/95
6. TDSR, Vol. 2, No. 22, 12/14/94, page 1
7. TDSR. Vol. 3, No. 15, 08/16/95, the House & Senate both proposed cutting the budget from \$710 Million to \$400 Million.
8. TDSR, Vol. 3, No. 15, 08/16/95, Spokane charges \$0.75, Chicago charges \$22, Los Angeles charges \$18, & NYC charges \$28 per trip.
9. Ibid.
10. TSRD, Vol. 3, No. 13, 07/12/95, Grand Rapids Area Transit Authority reduces the forms from 15 to 11 pg.
11. TSRD, Vol. 2, No. 14, 07/20/94, & ADA Paratransit Eligibility Manual, Sept. 1993, DOT-T-93-17.
12. Courtesy from Ricon, Power Lift, Hogan Mfg., Inc., & Mobile-Tech
13. TDSR, Vol. 2, No. 15, 08/17/94, page 6
14. ADA Law section 37.13
15. New York City Transit Authority, Rules and Regulations, 1979 Rule 80 (b)
16. TDSR, Vol. 2, No. 17, 09/21/94, page 5
17. Metro Transportation Facility Design Guidelines, Municipality of Metropolitan Seattle, 03/91, pg. 2-18
18. Courtesy of Ricon
19. Figures Courtesy of Kinedyne Corp. & Q'Straint
20. TDSR Vol. 3, No. 19, 10/18/95, page 7
21. TDSR Vol. 3, No. 17, 09/20/95, page 1, American National Standards Institute and Rehabilitation Engineering Society of North America

22. ITE Transportation Planning Handbook, Prentice Hall, 1992, page 134
23. TDSR, Vol. 3, No. 10, 05/17/95, page 6
24. TDSR, Vol. 2, No. 21, 11/23/94, page 1
25. TDSR, Vol. 2, No. 19, 10/19/94, page 1
26. TDSR, Vol. 2, No. 15, 08/17/94, page 5
27. TDSR, Vol. 3, No. 15, 08/16/95, page 2
28. Figures Courtesy of Carsonite and Increte Systems
29. TDSR, Vol. 3, No. 7, 04/5/95, page 4
30. Ibid.
31. TDSR, Vol. 3, No. 12, 06/21/95, "The Fourth District Court determined that the statute as written didn't authorize pre-employment alcohol testing"