Pacific ADA Center

ada National Network
Information, Guidance, and Training on the Americans with Disabilities Act

Great Lakes ADA Center

"High Rise Evacuation for People with Disabilities"

The Session is Scheduled to begin at 1:00 pm CT

We will be testing sound quality periodically

Telephone Option: 712-432-3100 Access Code: 930098 (not a toll free #)

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4

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5

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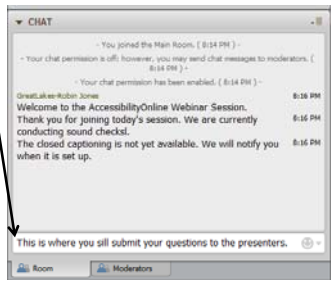

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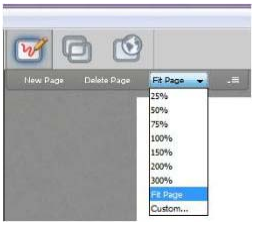
6

Customize Your View

- Resize the Whiteboard where the Presentation slides are shown to make it smaller or larger by choosing from the drop down menu located above and to the left of the whiteboard. The default is “fit page”



7

Customize Your View *continued*

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8

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  1. Send a private chat message to the host by double clicking “Great Lakes ADA” in the participant list. A tab titled “Great Lakes ADA” will appear in the chat panel. Type your comment in the text box and “enter” (Keyboard - F6, Arrow up or down to locate “Great Lakes ADA” and select to send a message); or
  2. Email adaconferences@adagreatlakes.org ; or
  3. Call 877-232-1990 (V/TTY)

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High Rise Evacuation for People with Disabilities

April 10, 2013

Marsha Mazz, U.S. Access Board

Kim Paarlberg, International Code Council

Glenn Hedman, Assistive Technology Unit, University of IL at Chicago

Allan Fraser, National Fire Protection Association

11

Access Board's Role

- **Guidelines for the built environment**
  - **Not for policies, program, procedures, or services**
- **Technical assistance and Training**
- **Research**

12

ADA & ABA Standards §207

Require compliance with the International Building Code (IBC) for accessible means of egress

2003 edition (§1007)

2000 edition & 2001 Supplement (§1003.2.13)

13

ADA & ABA Standards

What about compliance with later editions?

Permitted where equivalent or better ("equivalent facilitation" in the ADA Standards §103)

2006

2009

2012

14

ADA and Evacuation Planning

- The ADA does not specifically require evacuation planning
- The ADA does require reasonable modifications to policies, practices, and procedures
- Failure to address the needs of individuals with disabilities in an evacuation plan could result in a ADA violation

15

U.S. Access Board

(800) 872-2253 (voice)

(800) 993-2822 (TTY)

ta@access-board.gov

www.access-board.gov

16

Accessible Means of Egress for High Rise Buildings

Kim Paarlberg, Senior Staff Architect
International Code Council

Agenda

- Planning
- Notification & Communication
- Means of Egress (MOE)
- Accessible Means of Egress (AMOE)
- New Requirements

18

High-rise building

A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

19

Planning

Pre-Planning for Emergencies

- Fire evacuation plans
- Fire safety plans
- Lockdown plans
- Associated drills
- Worked out with the building owner/renter and the fire department
- Updated annually or when necessitated by changes
- Available for review

21

Fire Evacuation Plans

- Emergency routes
- Strategy - Evacuation or defend in place
- Critical equipment operation
- Assisted rescue procedures
- Verifying full evacuation
- Emergency responders
- Notification of occupants
- Notification of fire department
- Emergency voice/alarm communication system

22

Fire Safety Plans

- Reporting emergency
- Evacuation or relocation of occupants
- Site plans – occupancy assembly point, fire hydrants, fire truck route
- Floor plans – exits, routes, areas of refuge, fire alarm, extinguishers, fire hoses
- Major fire hazards
- Persons responsible

23

Emergency Drills

- High rise - annually
  - Assembly – quarterly
  - Educational – monthly
  - Institutional – quarterly on each shift
  - Hotel - quarterly on each shift
  - Apartments/dorms – 4 times annually
  - Group homes - quarterly on each shift

24

Notification& Communication

Signage

- Evacuation plans at elevators
- Signage at any non-accessible exits

26

Signage

- Visual exit signs at stairway entrances
- Tactile exit signs at stairway entrances

27

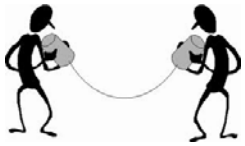
Signage

- Visual signage within the stairway
- Tactile signage at the door leading to the exit discharge

28

Two-way Communication

- At elevator lobbies in sprinklered buildings (2009 IBC)
- Variety of options
- Allow for communication and feedback between emergency responders and people who need assistance



29

Audible and Visible alarms

- Installed in accordance with NFPA 72.
- Manual fire alarm pull stations must be accessible.

30

Visible Alarms

- All public spaces.
- All common spaces.
- Group I-1 (assisted living) and R-1 (hotel) units per Table 907.9.1.3.
- Future expansion for:
  - Individual employee work areas.
  - Group R-2 (apartments) units.

31

Sprinkler automatic notification

- Activation of the sprinkler system automatically notifies the fire department
- Upon arrival the fire department can use the sprinkler panel to identify the floor where the fire is happening
- Standby power on the elevators allow for the fire department to move to the fire floor so they can offer assistance.

32

Means of Egress (MOE)

Means of Egress (MOE)

A *means of egress* is continuous and unobstructed path of vertical and horizontal travel from any occupied portion of a building or structure to a p*ublic way*.

Comprised of:

- Exit Access
- Exits
- Exit Discharge

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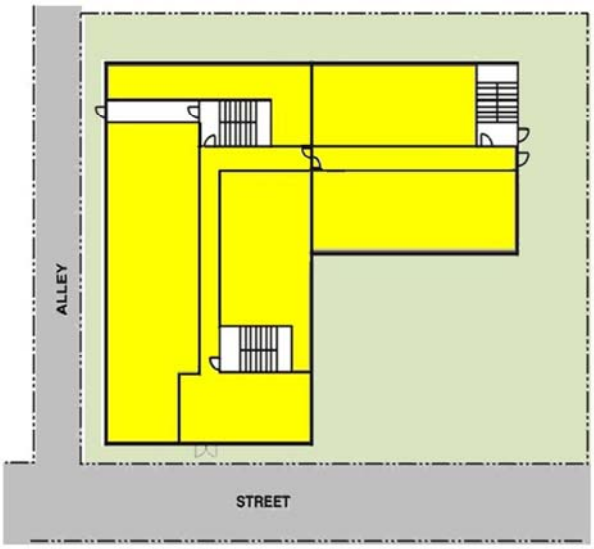
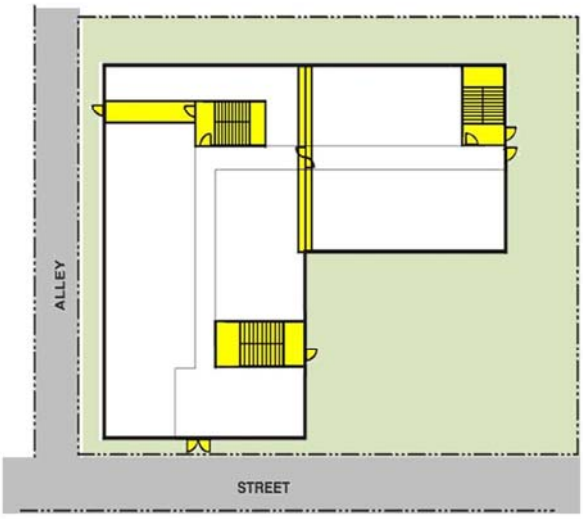
MOE: Exit Access



The path from any location in a building to an exit

35

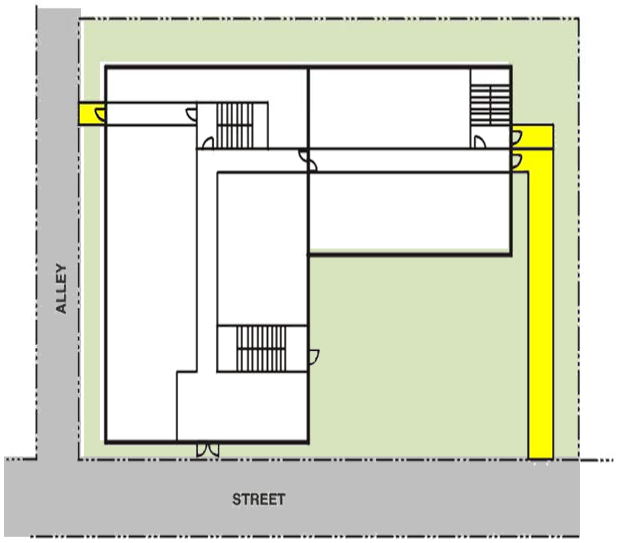
MOE: Exits



Exits include doors to the outside, enclosed exit stairways, or horizontal exits

36

MOE: Exit Discharge



The path from an exit to a public way (i.e., street or alley)

37

Accessible Means of Egress

Accessible MOE

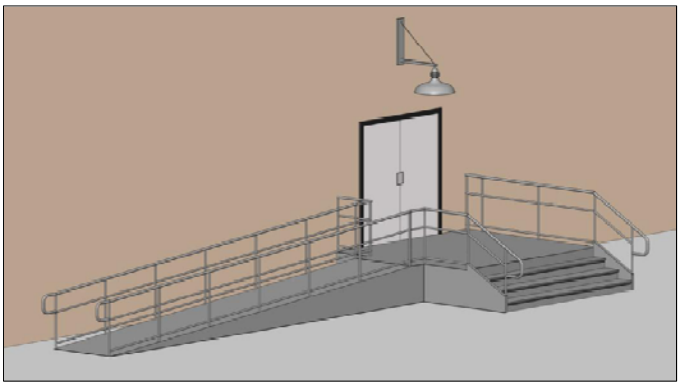
An *accessible means of egress* is:

A continuous and unobstructed accessible route of egress travel from any accessible point in a building or facility to a public way.

39

Accessible MOE

Allow for self evacuation when possible



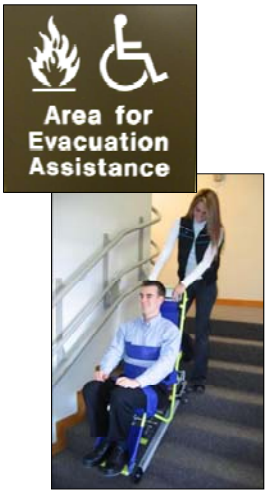
Drawing courtesy of Access Board

40

Accessible MOE

Assisted rescue when necessary

- Defend in place (i.e., hospitals, jails)
- Assisted evacuation at stairways
- Assisted evacuation at elevators with standby power



41

AMOE: Minimum Number

Minimum number of AMOE required:

1 - where 1 MOE required

2 - if more than 1 MOE required

Applicable to rooms, spaces and floors.

Exceptions:

- Existing facilities
- Areas not required to be accessible

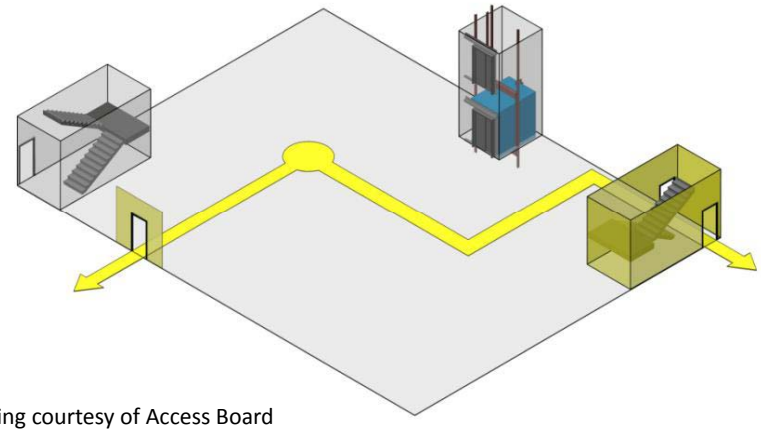
42

AMOE: Minimum Number

- IBC requires 2 or more MOE from most spaces and floors with few exceptions
- One means of egress is permitted based on:
  - Use of the space,
  - Maximum travel distance to the door leading from the space, and
  - Number of people in the space

43

Exit access: Grade level



Drawing courtesy of Access Board

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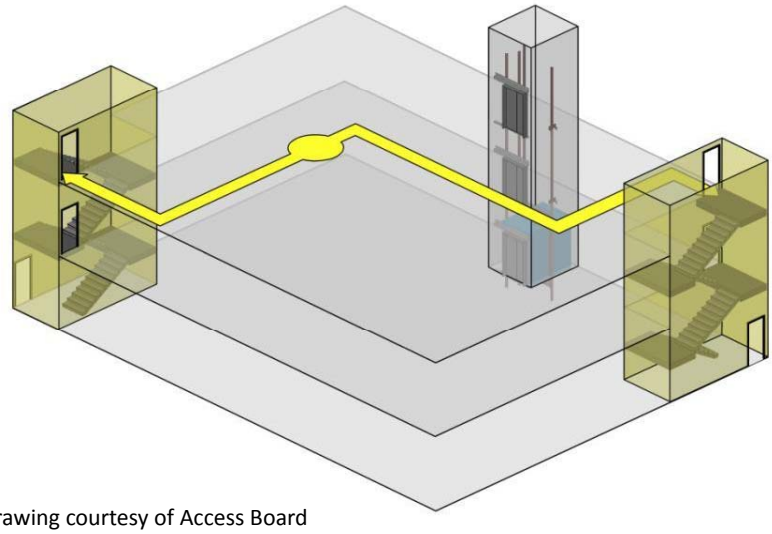
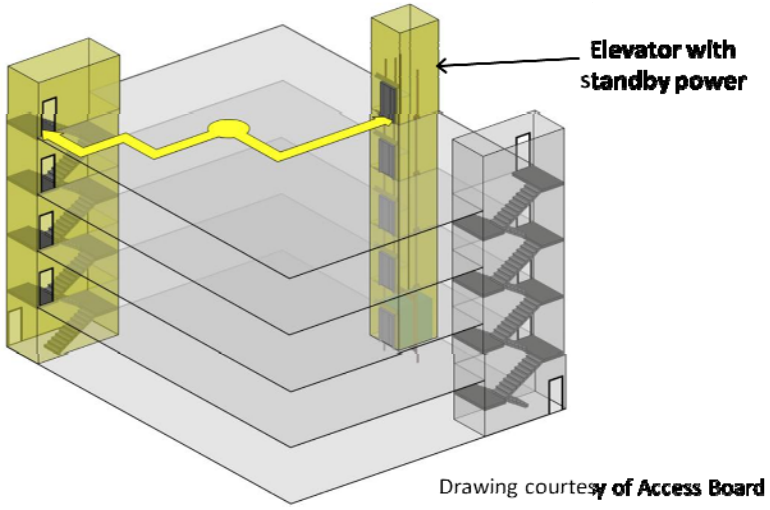
Exit Access: Upper Floors



Drawing courtesy of Access Board

45

Elevator with Standby Power

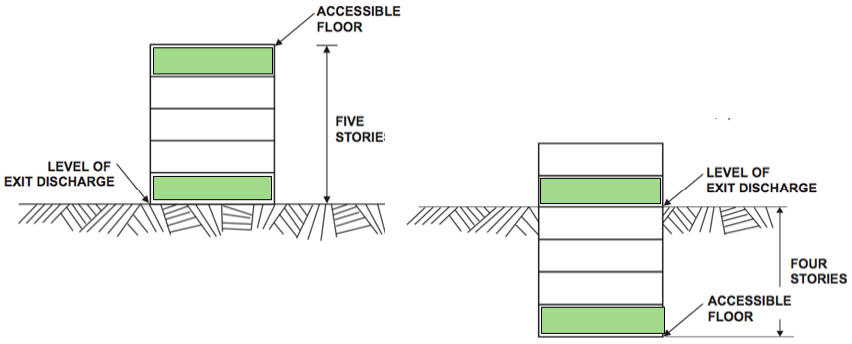


Required in buildings 5 stories or taller

46

Elevator with Standby Power

How to measure for floors 4 or more stories above or below the level of exit discharge



47

Elevator with Standby Power

Exceptions for standby power:

- **Sprinklered buildings with horizontal exits**
- **Ramps from each level**

48

New Requirements

2009 & 2012

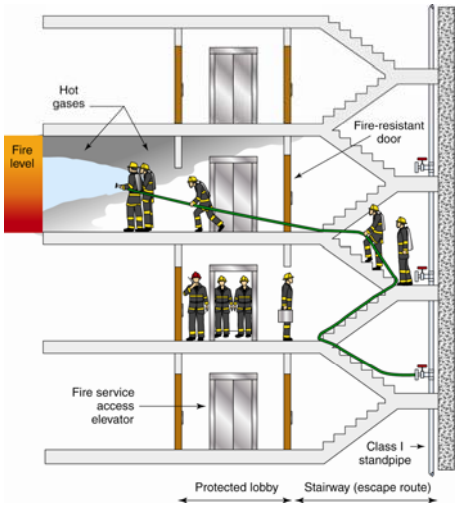
International Building Code

Fire Service Access Elevators

- Required in buildings with floor >120 ft. above fire department vehicle access
- Must open into a fire service access elevator lobby and have direct access to an exit enclosure
- Numerous requirements: lobby protection, minimum lobby size, standby power, monitoring of elevator, protection of wiring, etc.

50

Fire Service Access Elevators



Example of fire department staging at a FSAE.

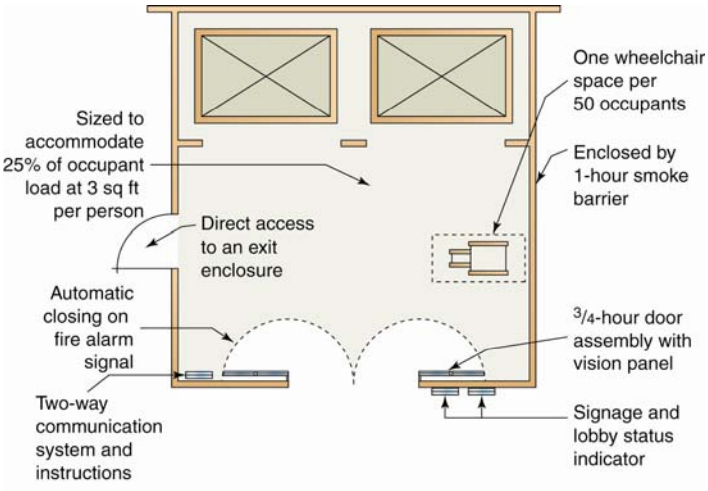
51

Occupant Evacuation Elevators

- Used for occupant self evacuation prior to emergency recall
- Must open into a elevator lobby and have direct access to an exit enclosure
- Numerous requirements: lobby protection, minimum lobby size, lobby status indicators, standby power, monitoring of elevator, protection of wiring, etc.

52

Occupant Evacuation Elevators



Occupant Evacuation Elevator Lobby

53

International Code Council

888-ICC-SAFE (888-422-7233)

E-mail: CareCenter@iccsafe.org

www.iccsafe.org

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Evacuation chairs

Glenn Hedman, PE, CPE
University of Illinois at Chicago

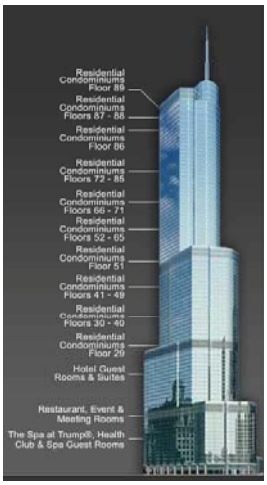
Evacuation chairs

- Glenn Hedman, PE, CPE
- University of Illinois at Chicago

- Vertical travel

56

Evacuation Chairs



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Evacuation Chairs

58

Spectrum of Stair Descent Devices

- Carry-Type Devices
- Track-Type Devices
- Sled-Type Devices

59

Spectrum of Stair Descent Devices

- Carry-Type Devices

60

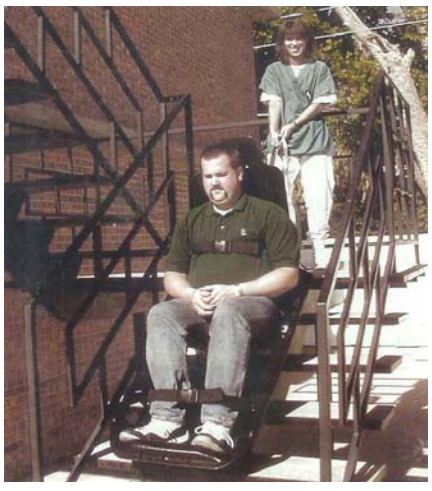
Spectrum of Stair Descent Devices

- Track-Type Devices

61

Spectrum of Stair Descent Devices

- Sled-Type Devices



62

Spectrum of Stair Descent Devices

Project SDD:

Stair Descent Device Performance for Firefighters

University of Illinois at Chicago

Glenn Hedman, Paul Reichelt, Karen Conrad, Ray Cunha

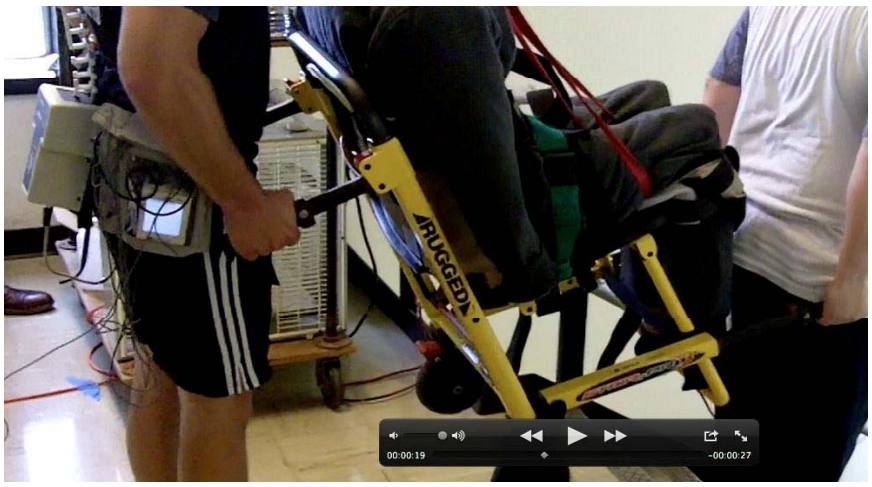
The Ohio State University

Steve Lavender, Jay Mehta, SangHyun Park

- Funded by the U.S. Department of Homeland Security
  - Federal Emergency Management Agency (FEMA)
    - Grant # EMW-2009-FPS-01944.

63

Project SDD



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Evacuation Chairs – Track-Type

65

Evacuation Chairs – Track-Type

- Occupant perspective
  - In seated position
  - Safety straps are present

66

Evacuation Chairs – Track-Type

- Occupant perspective
  - In seated position
  - Safety straps are present

67

Evacuation Chairs – Track-Type

- Occupant perspective
  - In seated position
  - Safety straps are present

68

Evacuation Chairs – Track-Type

- Occupant perspective
  - In seated position
  - Safety straps are present

69

Evacuation Chairs – Track-Type

- Operator perspective
  - Downward travel – one operator
  - Upward travel – two or more operators

70

Evacuation Chairs – Track-Type

- Operator perspective
  - Downward travel – one operator
  - Upward travel – two or more operators
  - "Controlled descent, manual ascent"

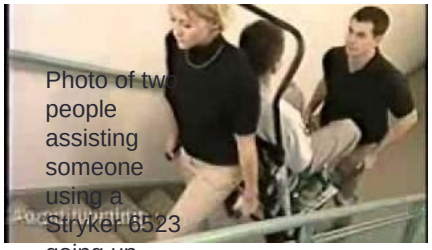

Photo of two people assisting someone using a Stryker 6523 going up stairs

71

Evacuation Chairs – Track-Type

- Operator perspective
  - "Powered descent, powered ascent"

72

Evacuation Chairs – Track-Type

- Operator perspective
  - "Powered descent, powered ascent"

73

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs

74

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings

75

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings

76

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings

77

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings

78

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings
  - Speed limitation
    - Friction

79

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings
  - Speed limitation
    - Friction

80

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings
  - Speed limitation
    - Friction
    - Speed governor

81

Evacuation Chairs – Track-Type

- Operation
  - Tracks/belts support chair on stairs
  - Wheeled base supports chair on landings
  - Speed limitation
    - Friction
    - Speed governor

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Performance Standard – Why?

- Increasing number of devices available
- Interest in device use to avoid injury (life safety professionals)
- Required or recommended element of evacuation plans

83

Performance Standard

- Past interest

NFPA

RESNA

the standard in safety

84

RESNA

- **RESNA**
- Rehabilitation Engineering and Assistive Technology Society of North America
- Professional membership society
- Approximately 1400 members

85

RESNA

- **RESNA**
- Rehabilitation Engineering and Assistive Technology Society of North America
- Board of Directors (11 members)
- Standing Committees (10)
- Operating Boards (4)
  - Journal Board
  - Professional Standards Board (ATP, SMS, RET credentials)
  - Development Board
  - **AT Standards Board** (ANSI-accredited standards development organization)

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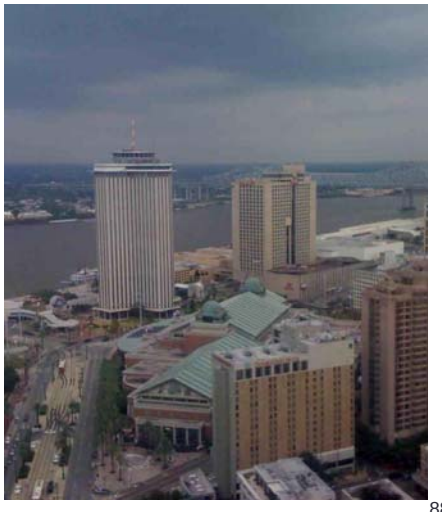
RESNA AT Standards

- AT Standards Committees
  - Wheelchairs
  - Wheelchairs & Transportation
  - Wheelchair Seating
  - Support Surfaces
  - Adaptive Sports Equipment
  - Adaptive Golf Cars
  - Cognitive Technologies
  - Emergency Stair Travel Devices used by Individuals with Disabilities (ESTD)

87

RESNA AT Standards

- AT Standards Committee on ESTD
- Approved by RESNA AT Standards Board in June 2009



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RESNA ESTD

- Interest Categories and “Balance”
  - Consumers
  - Manufacturers & Suppliers
  - Consultants (e.g., emergency management professionals)
  - Code Development / Code Enforcement professionals
  - Building Owners & Managers
  - Insurance Industry professionals
  - Testing Organizations & Facilities
  - Researchers
  - General or Other

89

RESNA ESTD work

- Important aspects of evacuation chairs
  - Description
    - Device type covered
    - Terminology
    - Measurement
  - Occupant features
  - Performance
  - Maintenance
  - Inspection

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RESNA ESTD work

- Terminology
  - Occupant
  - Operator
  - Type
    - Track-Type
    - Controlled descent
    - Manual ascent

91

RESNA ESTD work

- Occupant features
  - Weight capacity
  - Safety straps
  - Support surfaces

92

RESNA ESTD work

- Occupant features
  - Weight capacity
    - 350 lb (159 kg), min.
    - Use of RESNA WC-1 mannequin

93

RESNA ESTD work

- Occupant features
  - Weight capacity
    - 350 lb (159 kg), min.
  - Test method
    - 1.5 x weight capacity
      - Examples:
      - 350 lb, test at 525 lb
      - 400 lb, test at 600 lb

94

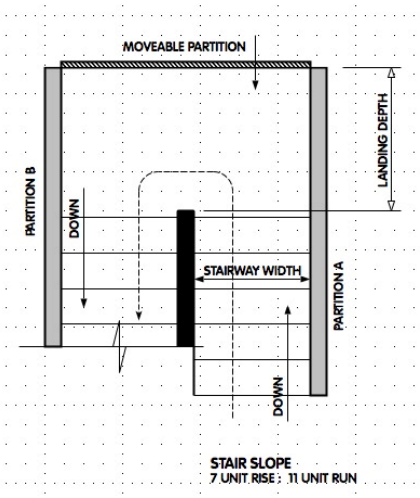
RESNA ESTD work

- Performance
  - Maneuverability
  - Stability

95

RESNA ESTD work

- Maneuverability



96

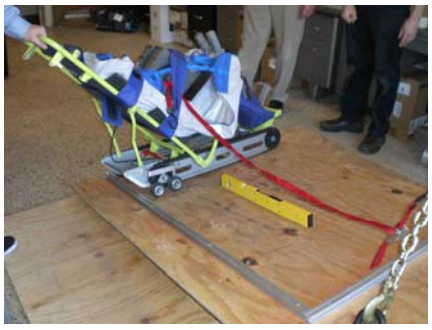
RESNA ESTD work

- Stability
  - Horizontal surfaces
    - Forward: 10 degrees

97

RESNA ESTD work

- Stability
  - Horizontal
    - Lateral: 10 degrees



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RESNA ESTD work

- Stability
  - Downward
    - Forward: 40 degrees

99

RESNA ESTD work

- Inspection
  - Location of device
  - Markings
  - Components
  - Frequency

100

RESNA ESTD work

- Inspection
  - Location of device
  - Markings
  - Components
  - Frequency

DRAFT RESNA NATIONAL STANDARD RESNA ED-1:2183

Annex B (normative)
RESNA ED-1:2013 Inspection Results Form

NOTE Use of this form in its entirety is required.

RESNA
AT-1 STANDARD
EMERGENCY STAIR TRAVEL DEVICES USED BY INDIVIDUALS WITH DISABILITIES

B.1 INSPECTION RESULTS **REFERENCE**

PROVIDER: _____

LOCATION: _____

DATE(S) OF INSPECTION: _____

101

RESNA ED-1 : 2013 Standard

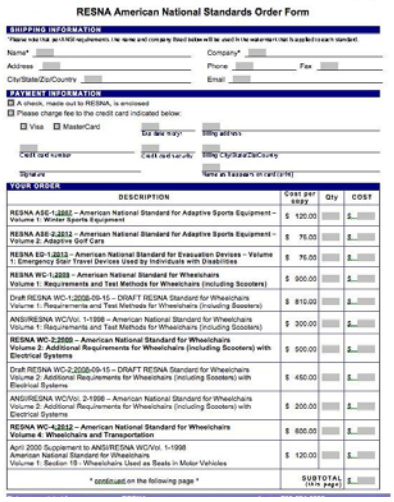
- Approved February 27, 2013
- Available April 2013

- **Key elements of ED-1**
- Weight capacity
- Measurements
- Maneuverability on code-compliant stairways and landings
- Stability on horizontal and stair surfaces
- Inspection

102

RESNA ED-1 : 2013 Standard

- RESNA
- www.resna.org/store
- 703-524-6686



RESNA American National Standards Order Form

SHIPPING INFORMATION

Name* Company*

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City/State/Zip/Country Email

PAYMENT INFORMATION

☐ A check, made out to RESNA, is enclosed

☐ Please charge fee to the credit card indicated below:

☐ Visa ☐ MasterCard

Billing address

Billing City/State/Zip/Country

Signature

YOUR ORDER

DESCRIPTION	Cost per copy	Qty	COST
RESNA ASE-1:2007 – American National Standard for Adaptive Sports Equipment – Volume 1: Winter Sports Equipment	$ 120.00		$
RESNA ASE-2:2012 – American National Standard for Adaptive Sports Equipment – Volume 2: Adaptive Golf Cars	$ 75.00		$
RESNA ED-1:2013 – American National Standard for Evacuation Devices – Volume 1: Emergency Stair Travel Devices Used by Individuals with Disabilities	$ 75.00		$
RESNA WC-1:2009 – American National Standard for Wheelchairs Volume 1: Requirements and Test Methods for Wheelchairs (including Scooters)	$ 900.00		$
Draft RESNA WC-1:2008-09-15 – DRAFT RESNA Standard for Wheelchairs Volume 1: Requirements and Test Methods for Wheelchairs (including Scooters)	$ 810.00		$
ANSI/RESNA WC/Vol. 1-1998 – American National Standard for Wheelchairs Volume 1: Requirements and Test Methods for Wheelchairs (including Scooters)	$ 300.00		$
RESNA WC-2:2009 – American National Standard for Wheelchairs Volume 2: Additional Requirements for Wheelchairs (including Scooters) with Electrical Systems	$ 500.00		$
Draft RESNA WC-2:2008-09-15 – DRAFT RESNA Standard for Wheelchairs Volume 2: Additional Requirements for Wheelchairs (including Scooters) with Electrical Systems	$ 450.00		$
ANSI/RESNA WC/Vol. 2-1998 – American National Standard for Wheelchairs Volume 2: Additional Requirements for Wheelchairs (including Scooters) with Electrical Systems	$ 200.00		$
RESNA WC-4:2012 – American National Standard for Wheelchairs Volume 4: Wheelchairs and Transportation	$ 600.00		$
April 2000 Supplement to ANSI/RESNA WC/Vol. 1-1998 American National Standard for Wheelchairs Volume 1: Section 19 - Wheelchairs Used as Seats in Motor Vehicles	$ 120.00		$
* continued on the following page *		SUBTOTAL (this page)	$

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- 312-413-7784 (desk)
- GHedman@uic.edu

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Evacuating Safely

Allan Fraser
Senior Building Code Specialist
National Fire Protection Association

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"Evacuating Safely"-One Size Doesn't Fit All!

Sign up free NFPA "e-ACCESS" newsletter @ www.nfpa.org/disabilities

Bill Scott, Chair
NFPA DARAC

(Deceased)

"All people, regardless of their circumstances, have some obligation to be prepared to take action during an emergency and to assume some responsibility for their own safety."

My Goal Today:

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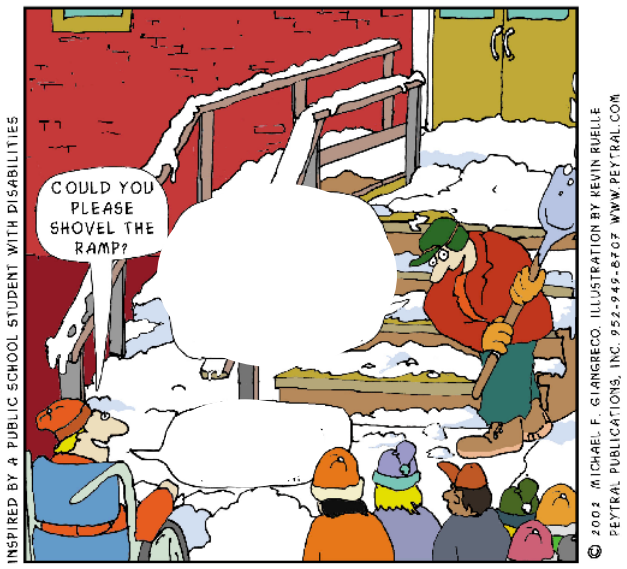

Changing Our Mindset…

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Changing Our Mindset…

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Changing Our Mindset…

Changing Our Mindset…

CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

Why Write This Guide?

- Older existing buildings generally aren't "accessible"-
- Many new buildings aren't fully accessible
- Some responsibility for ourselves-

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The 41 Deadlieset Disasters, 1970-2006

Fatalities	Date/Start	Event	Country
400,000	14-Nov-1970	Hurricane	Bangladesh
255,000	28-Jul-1976	Earthquake (Tangshan)	China
245,000	26-Dec-2004	Earthquake and Tsunami	Indonesia, Sri Lanka, India, Thai
140,000	30-Apr-1991	Hurricane Gorky	Bangladesh
88,000	8-Oct-2005	Earthquake	Pakistan
66,000	31-May-1970	Earthquake and landslide (Nevados Huascaran	Peru
50,000	15-Dec-1999	Flooding and Mudslides	Venezuela
50,000	21-Jun-1990	Earthquake(Gilan	Iran
41,000	26-Dec-2003	Earthquake (Bam)	Iran
35,000	Aug, 2003	Heat Wave	Europe
25,000	7-Dec-1988	Earthquake	Armenia
25,000	16-Sep-1978	Earthquake (Tabas)	Iran
23,000	13-Nov-1985	Volcanic Eruption and Mudflows (Nevado del Rui	Colombia
22,000	4-Feb-1976	Earthquake	Guatemala
20,103	26-Jan-2001	Earthquake (Gujarat	India
19,118	17-Aug-1999	Earthquake (Izmit	Turkey
15,000	19-Sep-1985	Earthquake (Mexico City	Mexico
15,000	11-Aug-1979	Dam Failure (Morvi)	India
15,000	1-Sep-1978	Flood (Monsoon rains in North)	India
15,000	29-Oct-1999	Hurrican (Orissa)	India
11,000	22-Oct-1998	Hurricane Mitch	Honduras
10,800	31-Oct-1971	Flood	India
10,000	25-May-1985	Hurricane	Bangladesh
10,000	20-Nov-1977	Hurricane (Andhra Pradesh)	India
9,500	30-Sep-1993	Earthquake (Marashtra State)	India
8,000	16-Aug-1976	Earthquake (Mindamao)	Phillipines
6,425	17-Jan-1995	Earthquake (Kobe)	Japan
6,304	5-Nov-1991	Typhoons Thelma and Uring	Phillipines
5,778	21-May-2006	Earthquake	Indonesia
5,300	28-Dec-1974	Earthquake	Pakistan
5,112	15-Nov-2001	Floods and Landslides	Brazil
5,000	10-Apr-1972	Earthquake (Fars)	Iran
5,000	23-Dec-1972	Earthquake (Managua)	Nicaragua
5,000	30-Jun-1976	Earthquake (West Iran)	Indonesia
5,000	5-Mar-1987	Earthquake	Ecuador
4,800	23-Nov-1980	Earthquake (Campagna)	Italy
4,500	10-Oct-1980	Earthquake (El Asman)	Algeria
4,375	21-Dec-1987	Boat Collision	Phillipines
4,000	15-Feb-1972	Storm; snow	Iran
4,000	24-Nov-1976	Earthquake (Van)	Turkey
4,000	30-May-1998	Earthquake (Takhar)	Afghanistan
1,698,115	**Total deaths**	**Total Events: 41 None in the US**	

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The 40 Most Costly Insurance Disasters, 1970-2006

Losses In Millions of 2005 US$	Fatalities	Date/Start	Event	Country
5,155	63	17-Oct-1989	Earthquake (Loma Prieta)	USA
18,450	57	17-Jan-1994	Earthquake (Northridge)	USA
2,088	23	23-Oct-1989	Explosion at Phillips petroleum	USA
2,438	26	20-Oct-1991	Fire - into urban area, drought	USA
8,272	24	11-Aug-2004	Hurricane Charley	USA
2,768	70	10-Sep-1999	Hurricane Floyd	USA, Bahamas
5,170	38	26-Aug-2004	Hurricane Frances	USA
11,684	124	2-Sep-2004	Hurricane Ivan	USA
2,692	59	4-Oct-1995	Hurricane Opal	USA
22,274	43	24-Aug-1992	Hurricane Andrew	USA
1,993	39	5-Sep-1996	Hurricane Fran	USA
2,024	-	12-Sep-1979	Hurricane Frederic	USA
4,230	600	20-Sep-1998	Hurricane Georges	USA, Caribbean
6,610	71	15-Sep-1989	Hurricane Hugo	USA
2,227	4	11-Sep-1992	Hurricane Iniki (Hawaii)	USA
4,136	3,034	13-Sep-2004	Hurricane Jeanne	USA,Haiti
45,000	1,836	29-Aug-2005	Hurricane Katrina	USA
10,000	34	20-Sep-2005	Hurricane Rita	USA
10,000	35	16-Oct-2005	Hurricane Wilma	USA
2,366	246	10-Mar-1993	Storm (East Coast)	USA
2,427	-	6-Apr-2001	Storms (tornado/hail)	USA
20,716	2,982	11-Sep-2001	Terrorist Attack	USA
3,403	45	2-May-2003	Tornadoes	USA
3,475	41	5-Jun-2001	Tropical Storm Allison	USA
$199,598	**9,494**		**24**	
Billion	**Deaths**		**Events (22 natural, 1 Bldg., 1 Attack)**	

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TABLE 1.3

The 41 Deadlieset Disasters, 1970-2006

Fatalities	Date/Start	Event	Country
400,000	14-Nov-1970	Hurricane	Bangladesh
255,000	28-Jul-1976	Earthquake (Tangshan)	China
245,000	26-Dec-2004	Earthquake and Tsunami	Indonesia, Sri Lanka, India, Thai
140,000	30-Apr-1991	Hurricane Gorky	Bangladesh
88,000	8-Oct-2005	Earthquake	Pakistan
66,000	31-May-1970	Earthquake and landslide (Nevados Huascaran	Peru
50,000	15-Dec-1999	Flooding and Mudslides	Venezuela
50,000	21-Jun-1990	Earthquake(Gilan	Iran
41,000	26-Dec-2003	Earthquake (Bam)	Iran
35,000	Aug, 2003	Heat Wave	Europe
25,000	7-Dec-1988	Earthquake	Armenia
25,000	16-Sep-1978	Earthquake (Tabas)	Iran
23,000	13-Nov-1985	Volcanic Eruption and Mudflows (Nevado del Rui	Colombia
22,000	4-Feb-1976	Earthquake	Guatemala
20,103	26-Jan-2001	Earthquake (Gujarat	India
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6,425	17-Jan-1995	Earthquake (Kobe)	Japan
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5,000	5-Mar-1987	Earthquake	Ecuador
4,800	23-Nov-1980	Earthquake (Campagna)	Italy
4,500	10-Oct-1980	Earthquake (El Asman)	Algeria
4,375	21-Dec-1987	Boat Collision	Phillipines
4,000	15-Feb-1972	Storm; snow	Iran
4,000	24-Nov-1976	Earthquake (Van)	Turkey
4,000	30-May-1998	Earthquake (Takhar)	Afghanistan
1,698,115	**Total deaths**	**Total Events: 41 None in the US**	

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The U.S. Fire Problem

- In 2010 - 1,331,500 fires reported in the US.
  - 3,120 civilian deaths,
  - 17,720 civilian injuries,
  - $11.6 Billion damage
- 482,000 structure fires
  - 2,755 civilian deaths (88%)
  - 15,420 civilian injuries
  - $9.7 Billion damage.
- Ave. = 0.006 deaths per structure fire (6 per every 1000 fires.)
- Ave.= $2 0,124 damage per fire

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The U.S. Fire Problem

- U.S. Most Costly Disasters 1970-2006 (36yrs.)
  - 9,494 Deaths in total
- 1970-2006 Civilian Fire Deaths
  - Approx. 3100/ year
  - 112,320 Deaths over 36 years.
- **10 times more likely to need to evacuate a small event!**

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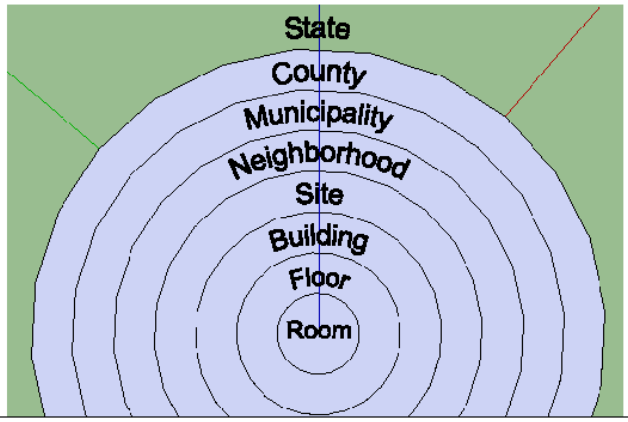
Figure 2

The Incident Area Model



The area from which emergency evacuation begins is always from the smallest occupied space. How far out from the center the individual(s) have to move and how quickly they need move to reach safety will depend on the event and its magnitude.
The model applies to all events however the actual plans for each person and how far out they need to evacuate will vary greatly depending on the type and magnitude of event.

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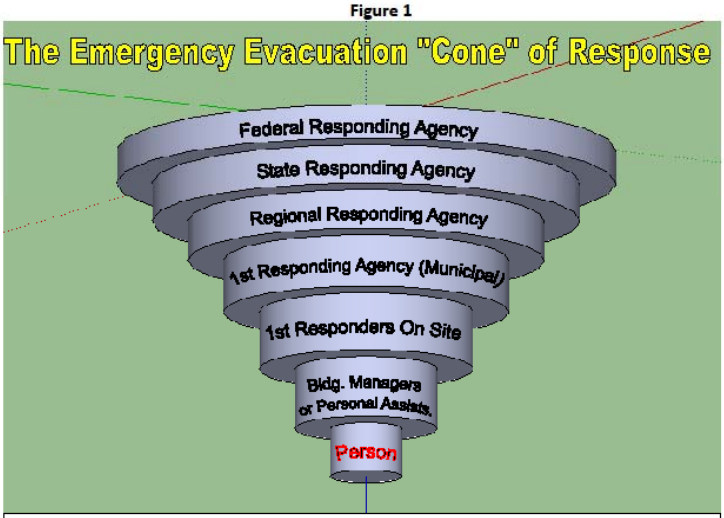
Figure 1

The Emergency Evacuation "Cone" of Response



Emergency evacuation response begins, ends and is all about getting the individual(s) to safety. Starting at the bottom and working up, each level on the cone is responsible for doing what they can and then notifying the next level up as the area of incident increases and additional response is necessary until the individual, all individuals, reach safety.
The model applies to all events however the actual plans for each person and level will vary greatly depending on the type and magnitude of event.

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Disability is about:

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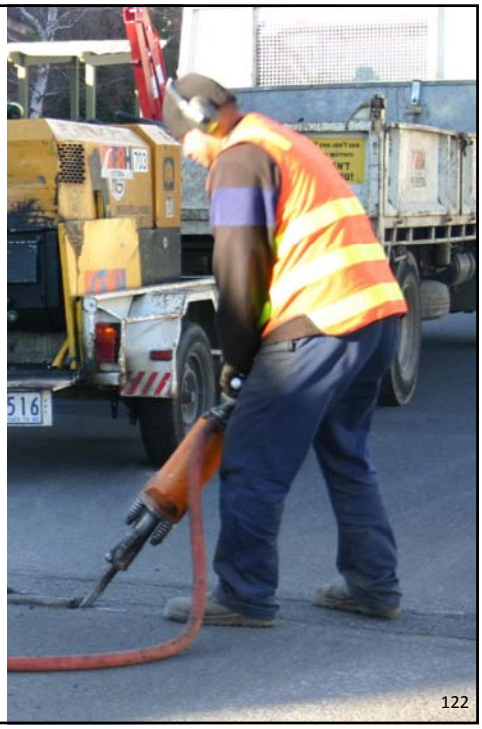
Disability is about:



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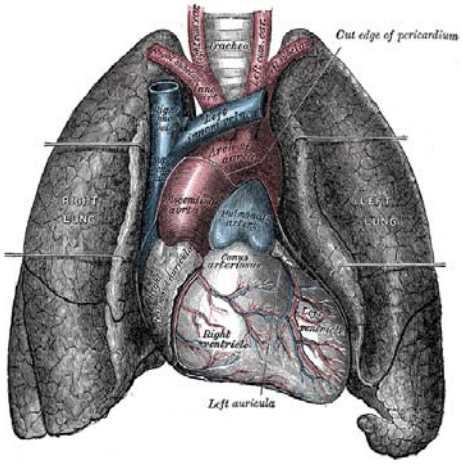
Disability is about:



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Disability is about:

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American Statistics

- **303,858, 000 Total Pop. (2010)**
- **56.6 million** - one or more disabilities.
- **38.59 million** - age 65 or over.
- **5.4 million** - age 85 and older.

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American Statistics

70%

American Statistics

8,000

American Statistics

7.5 million

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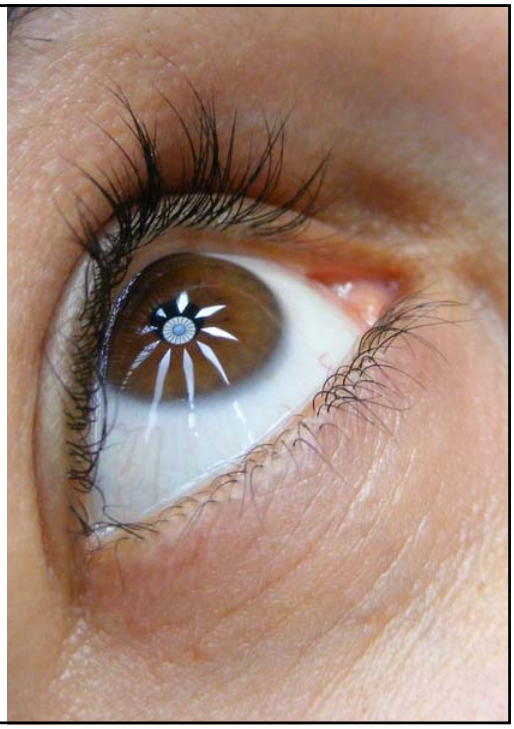
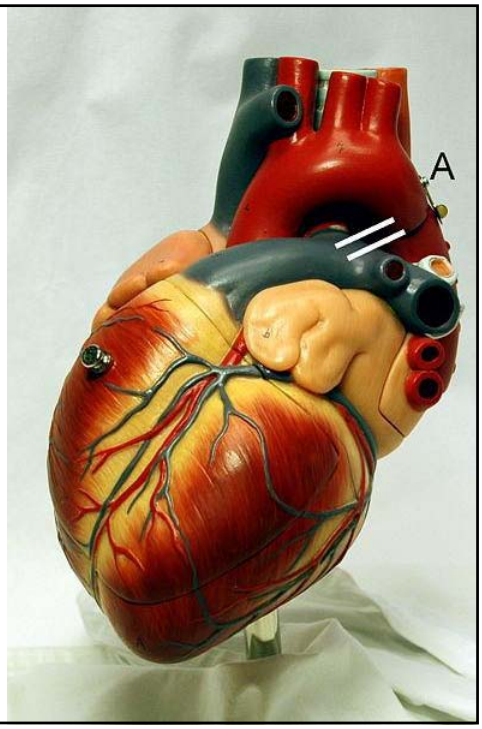
American Statistics

8.1 million



American Statistics

33.3 million



Learning

Confucius once said

- Read it, forget it.
- See it, remember it.
- Do it, understand it.

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Three Parts of a Building Evacuation System

1. The circulation path
2. The occupant notification system(s)
3. Directions to and through the circulation paths

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Four Items of Information (from Notification System)

1. What is the emergency?
2. Where is the way out?
3. Can I Use It?
4. What Assistance Do I Need?

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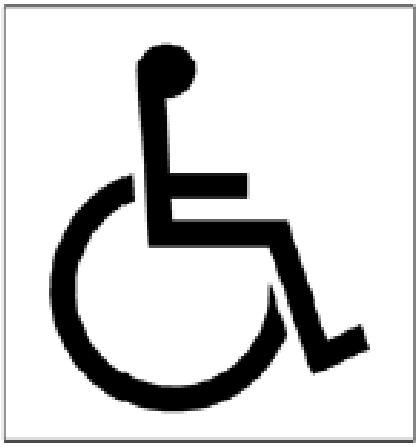
Five Categories of Disabilities:



1. Mobility
2. Visual
3. Hearing
4. Speech
5. Cognitive

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Way Finding Specifics:

Technique:

- **See:**
  - To perceive with the eyes
- **Observe:**
  - To be or become aware of, especially through careful and directed attention

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Type of Assistance Needed

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Assistance:

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Reasonable Conclusion

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Lets Look at Residents

The following is a profile of the 63 residents currently living at the above address:

Visually impaired	62
-Partials: some sight	18
-totals: no sight	45
Hearing impaired	12
-Deaf blind: Usher's Syndrome	3
Mobility impaired	7
Cognitively impaired	16
Speech impaired	3
Seniors over 70	18
Residents with one impairment	18
Residents with two impairments	38
Residents with three impairments	6
Residents with four impairments	1
Congenital blind	41
Adventitiously blind, accident or disease	22

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Lets Look at Staff

	Day	Evening	Overnight
Nursing Department –	6	6	3
Housekeeping -	2		
Maintenance -	1		
Kitchen –	6		
Administration & Development –	6		
Activity Department–	2		
Volunteer Coordinator –	1		
Totals for highest level	24	6	3

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Doing the Math

- 60 residents / 24 staff = 2.5 residents per staff
- 2 minute down + 2 minutes up= 4 minutes per evacuation or 10-15 minutes to evacuate the entire building

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Doing the Math

- 60 residents / 3 staff = 20 residents/ staff
- 2 minute down + 2 minutes up= 4 minutes per evacuation
- 20 evacs. * 4 minutes/evac.= 80 minutes (1 hour 20 minutes) to evacuate the building.

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Practice, Practice, Practice….

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NFPA's "Emergency Evacuation Planning Guide For People With Disabilities"

- Plan
- Practice
- Review
- Survive!

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www.nfpa.org/disabilities

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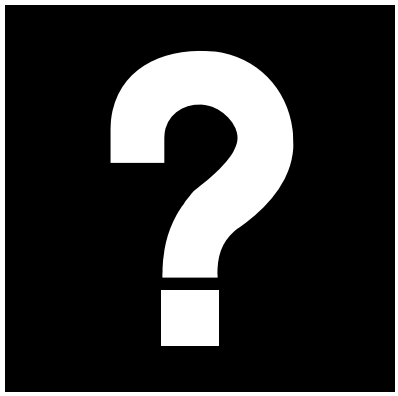
Questions



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in today's
Emergency Preparedness Webinar Series Session

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Please watch the website www.adaconferences.org/Emergency for future scheduled sessions

adaconferences@adagreatlakes.org 877-232-1990 (V/TTY)