Testimony in Support of HB 289
Commerce and
Labor Committee Hearing
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Introduction

Good afternoon Chairwoman Manning, Vice Chair Dean, Ranking Member Lepore-Hagan and members of the House Commerce and Labor Committee. My name is Kevin Sullivan and I am here today to testify as a proponent of HB 289. I would like to thank Representative Baldridge for introducing HB 289. As a National Coordinator with the Elevator Industry Work Preservation Fund, as an elevator mechanic and as a Qualified Elevator Inspector I am experienced in advocating for conveyance safety throughout the United States.

The EIWPF is a non-profit labor-management cooperation committee that represents nearly 600 elevator manufacturing, maintenance and repair companies and the International Union of Elevator Constructors, which has approximately 25,000 workers in the elevator industry. Our organization is committed to promoting public safety and the general welfare of the elevator industry.

32 states have conveyance safety laws. Ohio's neighboring states such as, Kentucky, West Virginia, Michigan and Indiana all have elevator safety laws like the Ohio Proposal. Attached to my testimony is an updated chart encompassing the states that have adopted similar legislation.

Conveyances can be very dangerous if not constructed, maintained and repaired correctly. Legislative bodies across the country have begun to recognize the need for additional safety mechanisms pertaining to conveyance systems, as a result of the loss of life due to malfunctions and human error. In Ohio there have been 2 recent elevator related deaths: one involving a firefighter and the other involving an elevator maintenance mechanic.

The goal of HB 289 – is to make strides in protecting public safety with respect to elevators and other conveyances in Ohio. My testimony today will highlight the public policy reasons to support this bill, as well as outline the key features of the bill that are designed to improve the safety of the elevator industry in Ohio.

From a public policy standpoint, there are tremendous reasons to improve the safety of elevators and other conveyances. While the elevator industry is relatively safe when compared to other areas of construction, when something does go wrong, the stakes are high, and injuries can be serious or even fatal. The public policy implications of ensuring safe elevators and other conveyances obviously do not stop at individuals working on or near them, but also spills over to those members of the public – including Ohio residents and visitors – who ride on elevators and escalators every day. Protecting public safety through elevator safety laws is not a new approach. As noted before, a majority of states in the U.S. have long recognized the need to ensure public safety in the elevator industry, and have adopted similar laws.

The elevator industry is a highly technical field and in order to be proficient an Elevator Mechanic needs to have all, or part of the skill sets of an electrician, a steam fitter, an iron worker and a carpenter. To troubleshoot and maintain existing equipment an elevator mechanic needs to be proficient in basic relay logic from 75 years ago, the most sophisticated microprocessor and computer programmable equipment of today, every technology in between and every new technology that is developed in the future. These skills are learned on the job, in apprenticeship programs and through continuing education.

Currently, elevator mechanic training and education are not required in the State of Ohio. This is dangerous for the elevator riding public as well as elevator industry workers. It is important that this Legislature protect the people of Ohio and not compromise the safeguards that are statistically proven to make for a safer elevator industry.

The Elevator Safety Act

The proposed elevator safety law, HB 289 is a bill that, by design, covers all work in the elevator industry and trade, thereby providing the potential to vastly improve the safety of elevators, escalators and other conveyances. It governs safety,

training, education, and licensing for elevator contractors and elevator mechanics. In addition to these key features, the bill incorporates the key applicable industry standards and codes developed by experts in the field, including the American Society of Mechanical Engineers.

First, to enhance equipment safety, the bill subjects equipment to specified registration and inspection requirements. Through the registration process, the state can obtain information on the type, rated load and speed of the equipment, name of manufacturer, product location and the purpose for which the product is used. By requiring a certificate of operation for installations, the bill takes steps to make sure qualified elevator personnel properly completed the installation in compliance with National and State Elevator Safety Code Requirements.

Second, under the law, in order to work on elevators in Ohio, a business must obtain an elevator contractor's license and employ at least one licensed elevator mechanic. Key to the licensing requirements is that the contractor must demonstrate that it is reputable and has obtained the necessary insurance coverage. Moreover, the law demonstrates flexibility by authorizing reciprocity for contractors that have similar licenses in other states.

Third, the legislation presents a good start in establishing licensing requirements for elevator mechanics. The law, in establishing minimum training and education requirements for one to become a licensed elevator mechanic and setting forth continuing education requirements to renew a license, will assist

In ensuring that elevator mechanics have the experience, training and knowledge necessary to safely and properly construct, install, service, test, repair and maintain elevators and other conveyances under the bill. Like elevator contractor's licenses, flexibility is granted for elevator mechanic's licenses in the form of a limited grandfather clause within one year of the effective date of the bill and reciprocity for a person that possesses an elevator mechanic's license from another state. This legislation also provides two paths for becoming an elevator mechanic. The National Elevator Industry Educational Program and the Certified Elevator Technician Training Program are both approved and recognized as Elevator Mechanic Apprenticeship Programs by the US Department of Labor.

Conclusion

In summary, by requiring licensing of elevator contractors, and elevator mechanics and raising the training and education standards needed to work on conveyances HB 289 helps address many of the potential dangers associated with elevators and other conveyances.

The EIWPF supports HB 289 because its design and purpose aligns with a key mission of the organization - improving the public safety of elevators and other conveyances.

Thank you for the opportunity to testify before the Committee today.

Impact of Safety Legislation on Elevator Accidents

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1. Introduction

Elevator and escalator installation, repair and maintenance is one of the most dangerous industries for both workers and passengers. In the United States thousands of people are killed or seriously injured every year. Workers are at great risk when working in or near elevator shafts, conducting emergency evaluations or stalled units or trouble shooting live electrical circuits. Some state and local authorities recognize such hazards and therefore enforce strong regulations and require periodic inspections. Trade associations, such as the American Society of Mechanical Engineers (ASME), have also set standards for the construction and maintenance of elevators and escalators.* But there is a widespread belief within the industry that weaker regulations in certain states and localities results in higher accident and death rates, placing workers and passengers at grave risk. This study tests that important assumption using empirical data to analyze the safety records in certain states before and after they instituted stronger standards.

2. Major Findings

Our analysis found that stronger state safety laws had a positive effect in decreasing the number of elevator accidents.

- The total number of elevator accidents declined 26% in states where stronger safety legislation was passed.
- Seven of the eight states witnessed a dramatic decrease in accidents; in fact three states saw a decline of more than 30% (Illinois, Virginia and Washington St.).
- While elevator safety legislation has been passed in 32 states and the District of Columbia, comprehensive data from the Bureau of Labor Statistics was only available for the eight states analyzed in this study.
- Florida data was available, but we eliminated it from our sample states for these reasons:
    1. Dramatic increase in accidents after regulations were enacted
    2. Little or no data in the eleven years prior to passage
    3. No data from 2011-2015

3. Scope of the Study

The EIWPF, an elevator industry Labor-Management cooperative with 633 participating employers and 23,666 workers, asked Locker Associates (LA) to conduct a study on the impact of stronger state safety legislation on elevator and escalator accidents and fatalities sustained by both passengers and workers. The intent of the study was to determine whether stronger state safety regulations had a positive effect on decreasing the number of accidents and deaths.

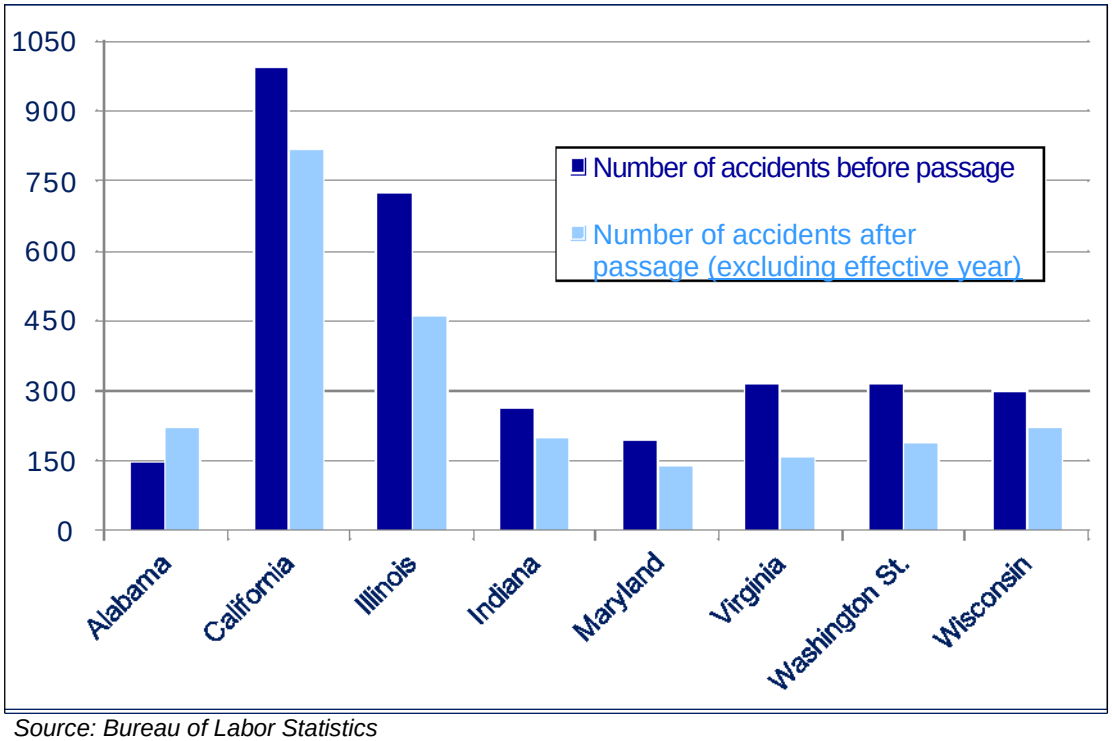
Nineteen (19) states, as well as the District of Columbia have enacted major laws regarding elevator safety since 1993. From this original list, LA determined that only eight (8) of these states had sufficient data available from the BLS to be included in the study. Unfortunately, the other states were discarded due to gaps in the available data, the enactment date too recent or due to a conflict with data reporting. The entire selection process is more fully described in Appendixes A and B. We did not analyze or take into account the specific regulations enacted in each state which most likely varied widely from state-to-state.

*Source: Michael McCann and Norman Zaleski, “Deaths and Injuries Involving Elevators and Escalators,” Center for Workers Rights, July 2006]

4. Data Analysis

a. Our examination of the data showed that stronger state safety laws had a positive effect on reducing elevator accidents in 7 out of 8 states where reliable data was available. **Figure 1** shows that total elevator accidents fell in California, Illinois, Indiana, Maryland, Virginia, Washington St. and Wisconsin, Of the eight states, the only state seeing an increase in accidents was Alabama, by over 50%. In 2008 Alabama reported an unusually high number of accidents. If we excluded 2008 from Alabama's accident count and only counted three years before and after, Alabama would have seen a decrease of 25% instead of an increase of 52%.

Figure 1: Number of Accidents by State Before & After Safety Law Implementation, 1993-2015



Source: Bureau of Labor Statistics

b. In **Figure 2**, we can see that the combined number of accidents for all eight states shows an impressive decline of 26% after the enactment of stronger safety regulations. Total accidents dropped from **3,253** in the pre-law period to **2,410** in the post-law period.

Figure 2: Percent Change in Total Accidents Before & After Legislation (1992-2015)

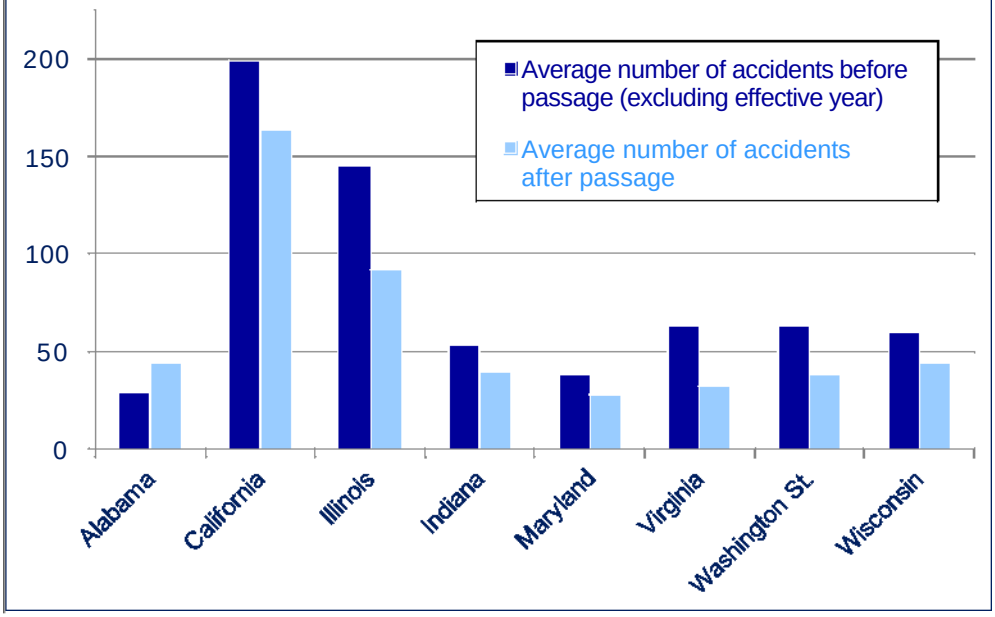
State	Number of Accidents Before Passage	Number of Accidents After Passage (excluding effective year)	% Change
Alabama	145	220	51.7%
California	997	820	-17.8%
Illinois	723	460	-36.4%
Indiana	266	200	-24.8%
Maryland	192	140	-27.1%
Virginia	314	160	-49.0%
Washington St.	316	190	-39.9%
Wisconsin	300	220	-26.7%
Total w/Alabama	**3,253**	**2,410**	**-25.9%**
Total w/o Alabama	**3,108**	**2,190**	**-29.5%**

Source: Bureau of Labor Statistics

c. If you remove Alabama from the sample states, the drop in the gross number of accidents is 30% between the two periods investigated.

d. Averaging the accident data over the two periods for each state by dividing the gross number of accidents by the number of years covered in each period is presented in **Figures 3 and 4**. Accidents fell in seven of the eight states and if you remove Alabama from the sample the average decline is 30%.

Figure 3: Average Accidents Before and After Legislation Enactment Year



Source: Calculations made on data provided by the Bureau of Labor Statistics

Figure 4: Average Accidents Before and After Legislation Enactment Year

State	Average Accidents Before Legislation	# Years Included in "Before" Period	Average Accidents After Legislation	# Years Included in "After" Period	% Change
Alabama	29	9	44	7	51.7%
California	199	5	164	5	-17.6%
Illinois	145	5	92	5	-36.6%
Indiana	53	9	40	7	-24.5%
Maryland	38	10	28	6	-26.3%
Virginia	63	6	32	6	-49.2%
Washington St.	63	5	38	5	-39.7%
Wisconsin	60	5	44	5	-26.7%
Total	**650**	**--**	**482**	**--**	**-25.8%**

Source: Calculations made on data provided by the Bureau of Labor Statistics

5. Methodology

The data for workplace injuries and deaths related to elevators and escalators was derived from the **Bureau of Labor Statistics (BLS)** Workplace Injury and Illness database. The collected data is presented by state and year. LA secured the entire dataset from the BLS and analyzed the statistics as follows:

- The BLS data on escalator accidents and fatalities proved unusable, so we focused exclusively on elevators, using BLS Category #346X-Elevators and BLS Category #346XXX-Elevators, hoists, aerial lifts, personnel platforms (except truck-mounted.
- The BLS data on fatalities proved problematic so LA decided to focus solely on elevator accidents (see discussion on fatalities below).
- Nineteen (19) states, as well as the District of Columbia have enacted major laws regarding elevator safety since 1993. From this original list, LA determined that only eight (8) of these states had sufficient data available from the BLS to be included in the study. Unfortunately, the other states were discarded due to gaps in the available data, the enactment date too recent or due to a conflict with data reporting. The entire selection process is more fully described in Appendixes A and B. We did not analyze or take into account the specific regulations enacted in each state which most likely varied widely from state-to-state.
- Two ranges were created -- one from the period before legislation was enacted and the second from the period after legislation was enacted. LA decided to compare the accident rates before and after regulations were enacted in each state to determine accident trends. If accident rates declined after the legislation then it would be reasonable to attribute this positive trend to the new safety regulations.
- The specific before and after yearly ranges vary for each state depending on the year the state law was enacted, as well as whether there is sufficient data for each year. Further data definitions, terms and calculations are available in Appendixes A and B.
- It is important to note that LA eliminated the enactment year to allow a reasonable time for the regulations to be implemented. As a result, all enactment years were removed from our calculations of the data for “average accidents”.
- Some states did not have data available for every year in the before and after periods. We have included in Appendix C the actual years utilized in the before and after periods along with the legislation year for each state.
- Average accidents are the number of accidents in the range of the “before” and “after” period that contained reliable data, added together and divided by five (the total number of years used before and after enactment.
- The analysis could be further refined by taking into account the number of elevators operating in each state for each year under investigation. Unfortunately, no data was uncovered that offered comprehensive statistics for most of the states for the years covered.

6. National Fatality Data

The data collected from the BLS on elevator fatalities was not broken down by state and therefore was unusable for this study.[1]

- According to the table below, on average **25 workers died in elevator accidents each year**.
- The chart reflects fatalities as a result of elevator exposure; it does not include fatalities as a result of escalator exposure.
- The years chosen reflect the general time-span LA studied elevator injuries on a state-level.
- The steep decline in fatalities beginning in 2011 could be attributed to the implementation of stronger state safety laws that have had enough time since enactment for the vast majority of elevator mechanics to have completed the required education curriculum.

Elevator Fatalities, 1995-2014	
Year	**Number of Elevator-Related Fatalities**
1995	29
1996	29
1997	27
1998	23
1999	30
2000	23
2001	31
2002	38
2003	28
2004	34
2005	25
2006	32
2007	42
2008	42
2009	24
2010	29
2011	5
2012	3
2013	3
2014	8
TOTAL	**505**

[1] *Source: The Bureau of Labor Statistics: "Workplace Injuries & Fatalities" National dataset; Primary Source of Fatality: Elevators*

7. Recommendations

- To help save lives and minimize accidents states currently lacking strong elevator regulations should immediately enact such laws. This study clearly demonstrates the positive impact of safety legislation in lowering the number of elevator accidents.

- Elevators and escalators are not a luxury, but are in fact a significant part of the necessary and everyday public transportation system throughout the United States, especially in high-rise residential and commercial buildings, hospitals, schools, airports, train stations, etc. Arguably, as a vital part of the U.S. transportation sector, elevators and escalators require strong *national* safety protocols and new legislation.

- While there are some minimal national safety measures in place, the public as well as elevator/escalator workers could greatly benefit from stronger national laws.

- Baring federal improvements, strong regulations should be enacted in all states and larger municipalities. At a minimum, regulations should require only fully qualified and accredited firms and workers to install, repair and maintain elevators and escalators.

- Stronger regulations should also increase inspections and produce more complete and reliable accident data for each state that is easily accessible to the public on a timely basis.

- In fact, it is in the best interest of building owners and managers to have strong regulations in place to help them avoid catastrophic injuries and deaths, as well as limit liability, customer inconvenience associated with repairs and emergencies and other cost burdens.

Appendices

Appendix A: Data Setup and Range Calculations

Due to inefficiencies in the BLS data, the original goal to separate years from five (5) years prior and 5 years after was not met in all states. We also eliminated the enactment year to allow a reasonable time for the regulations to be implemented. These methods were employed because data was not available for each year or in some cases, a series of years. Consideration was taken to ensure equal weighting of years in the range, whenever applicable.

BLS data was pulled from "private agencies" only so as to avoid overlap. The decision to exclude state and local government ownership was made to avoid overlaps including the potential for mixed-use (private and public) buildings.

Appendix B: On Why Data Was Used or Eliminated

The BLS data is occasionally demarcated by "_", denoting unavailable data. Both states and years were removed from the study if they did not have sufficient data available.

- As per a conversation with Jim Reiss, an economist at the BLS' Office of Safety, Health and Working Conditions, the BLS is unable to obtain data for the following three reasons:
  1. There was no data present for a particular demography (combination of year & state)
  2. Data was confidential and therefore excluded by the BLS
  3. Data was considered insufficient or improperly documented and excluded by BLS regional staff

States Excluded from Total States Passing Regulations		
Excluded States	**Year Enacted**	**Reason for Exclusion**
Arkansas	2007	Insufficient data
Colorado	2008	Insufficient data
Florida	2003	Reporting prior to enactment conflict with reporting after enactment
Kentucky	2010	Insufficient data
Mississippi	2014	Passage in 2013; data not enough years after passage
Montana	2007	Insufficient data
Nebraska	2010	Insufficient data
Oklahoma	2007	Insufficient data; data only reported three years after passage
Utah	2011	Insufficient data
Vermont	2003	Insufficient data
Washington, DC	n/a	Passed; effective date yet to be determined
West Virginia	2011	Insufficient data

Appendix C: Accident Data for Included States, Noting Year of Enactment (1992-2015)								
Year	**AL**	**CA**	**IL**	**IN**	**MD**	**VA**	**WA**	**WI**
1992	Y	Y	--	Y	Y	Y	Y	--
1993	Y	Y	--	Y	Y	Y	Y	Y
1994	Y	Y	--	Y	Y	Y	Y	Y
1995	Y	Y	--	Y	--	--	Y	Y
1996	--	Y	--	Y	--	Y	Y	Y
1997	--	Y	--	Y	--	Y	Y	Y
1998	Y	Y	Y	--	Y	Y	Y	Y
1999	--	Y	Y	Y	Y	Y	Y	Y
2000	Y	Y	Y	Y	--	Y	Y	Y
2001	--	Y	Y	--	--	Y	Y	Y
2002	Y	Y	Y	Y	Y	Y	Y	Y
2003	Y	Y	Y	Y	--	Y	Y	Y
2004	**X**	**X**	**X**	**X**	**X**	Y	**X**	Y
2005	Y	Y	Y	--	Y	--	Y	Y
2006	Y	Y	Y	--	Y	**X**	Y	Y
2007	Y	Y	Y	Y	Y	Y	Y	Y
2008	Y	Y	Y	Y	Y	Y	Y	Y
2009	--	Y	Y	--	--	Y	Y	**X**
2010	--	Y	Y	Y	Y	--	Y	Y
2011	Y	Y	Y	Y	Y	Y	Y	Y
2012	Y	Y	Y	--	Y	Y	Y	Y
2013	Y	Y	Y	Y	Y	--	Y	Y
2014	--	Y	Y	Y	Y	Y	Y	Y
2015	--	Y	--	Y	--	Y	Y	Y

LEGEND: --: data not available; Y: data available; **X**: enactment year (not included in statistical analysis)