

**PRESENTATION OF THE
BOARD OF ELECTRICIANS AND PLUMBERS**

**TO THE HOUSE COMMITTEE ON
CONSUMER PROTECTION & COMMERCE**

**TWENTY-FOURTH LEGISLATURE
Regular Session of 2008**

**Wednesday, February 20, 2008
2:00 p.m.**

**TESTIMONY ON HOUSE BILL NO. 937, H.D. 2, RELATING TO ELECTRICAL
AND PLUMBING TRADES.**

**TO THE HONORABLE ROBERT N. HERKES, CHAIR,
AND MEMBERS OF THE COMMITTEE:**

My name is Norman Ahu, chair and public member of the Board of Electricians and Plumbers ("Board"). The Board has not been able to meet as a whole to discuss this carryover measure, but will do so at a special meeting scheduled for February 20, 2008 at 8:30 a.m., the results of which will be reported to the Committee at this hearing. However, as this bill is substantively identical to the H.D. 1 version except for the defective date of July 1, 2020, the Board's formal stated position last year on the H.D. 1, was in opposition.

This purpose of this bill is to amend licensing requirements for various electrician classifications. As the Board testified last year, the impact of the H.D. 1 was that it would:

- 1) Reduce licensing standards for the journey worker electrician ("EJ") and journey worker specialty ("EJS") classifications; and

- 2) Increase the licensing standards for the journey worker industrial ("EJI"), maintenance electrician ("EM"), and all supervising level electrician categories.

The Board believed there was no justification to amend licensing standards and further was concerned with the emphasis placed on graduation from an accredited academic program when the Board knew of no such in-State program for the EJ or EJS. The Board was aware of the Honolulu Community College Electrical Installation and Maintenance Technology associates degree program but the Board accepts this for the EM license, not the EJ or EJS classification. The bill also placed emphasis on graduation from an apprenticeship program but the H.D. 1 did not specify the years and hours of experience required. As the Board knew other states' apprenticeship programs required 4 years and 8,000 hours of work experience, and that this would be less than the 5 years and 10,000 hours which the Board required for an EJ or EJS License, the Board was concerned this could result in unqualified individuals being eligible for licensure.

The H.D. 1 also proposed to increase licensing requirements for the EM and EJI classifications by mandating that applicants successfully complete an "accredited academic program" or "apprenticeship program" covering the principles of electrical theory and the requirements of the National Electrical Code ("NEC"). As the Board stated last year, current requirements were already quite rigorous where the person must have at least one year of experience in

performing electrical maintenance work or proof of two years of schooling in the electrical trade for the EM, and have at least five years full-time or its equivalent but not less than 10,000 hours of experience in the trade under the supervision of a journey worker or supervising industrial electrician for the EJI classification. Similar to the objections to lower requirements for the EJ and EJS, the Board did not see the justification for increasing requirements for the EM and EJI. It also had the same concerns with requiring graduation from an accredited academic program when none exist in-State, and recognizing other apprenticeship programs that could fall below the Board's standards. The Board also believed the impact on small businesses could be adverse should they try to establish an apprenticeship program but where, according to the Department of Labor's Apprenticeship Division, only large employers, unions, or large associations apply for state apprenticeship approval.

The H.D. 1 also proposed to significantly increase the minimum licensing requirements for the supervising electrician level classifications. On top of the current requirement that an applicant must be a journey worker level electrician for 4 years or have 4 years equivalent experience in the trade, the bill added a requirement that the supervising electrician ("ES") applicant successfully complete an associate degree or certificate program or electrical apprenticeship program covering the principles of electrical theory and the requirements of the NEC. Again, the Board saw no justification for increasing requirements.

The Board also was concerned that the proposed amendment to section 448E-5.5, HRS, new subsection (c) mandated the licensing examination test an applicant at the "level of knowledge gained through the successful completion of an associate degree or certification program in electrical theory." This was an unrealistic expectation when there was no "associate degree", "accredited academic program", or "certification program" in electrical theory from an accredited institution for the journey worker level or supervising level electrician. The Board found it unnecessary to mandate that the content of the examination cover the NEC when the licensing exam already covers such matters.

Finally, the Board believed H.B. No. 937, H.D. 1, as a whole, had no consistent regulatory purpose because on one hand it lowered licensing standards, and then on the other hand substantially increased licensing standards. The consequences the Board foresaw were that they would be licensing less than qualified individuals (as compared to current standards) or making licensing so difficult there could ultimately be a shortage of electricians. For these reasons, the Board was in strong opposition to the amendments proposed in H.B. No. 937, H.D. 1.

As previously indicated the Board will be meeting on February 20, 2008 to discuss this particular legislative proposal which will be the second discussion with the International Brotherhood of Electrical Workers, Local 1186, with whom on February 12, 2008 no consensus was reached.

Thank you for the opportunity to provide testimony on this measure.



International Brotherhood of Electrical Workers

LOCAL UNION NO. 1186 • Affiliated with AFL-CIO

1935 HAU STREET, ROOM 401 • HONOLULU HI 96819-5003

TELEPHONE (808) 847-5341 • FAX (808) 847-2224

SUPPORT OF HB 937 HD2, RELATING TO ELECTRICAL & PLUMBING TRADES

TO: **Consumer Protection & Commerce Vice Chair (VIA FAX: 586-6161)**
For Hearing on Wednesday, February 20, 2008 at 2:00 p.m., in Room 325
House Committee on Consumer Protection and Commerce

RE: HB 937 HD2

Chair Herkes, Vice Chair McKelvey, and members of the House Committee on Consumer Protection and Commerce,

My name is **Gerald H. Yuh**, I am the Business Manager / Financial Secretary of the International Brotherhood of Electrical Workers Local Union 1186 representing over 3500 members of the electrical, telecommunication, Oceanic Cable and civil service employees at Pearl Harbor Shipyard, Kaneohe Marine Base and Hickam. IBEW local 1186 also represents over 140 signatory electrical contractors that perform over 80% of electrical work in Hawaii.

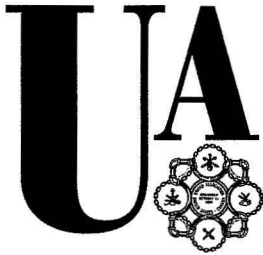
As the author of H.B. 937 I strongly support this bill. As a licensed electrician with foreman caliber experience, I have worked on many of the state's largest projects. As the principal officer of the IBEW L.U. 1186 I have witnessed the sub standard ability of individuals that do not have formal training. Currently, the only requirement to qualify to take the electrician's journeyman license is field experience. Very few individuals who have not attended a structured apprenticeship program where required curriculum is mandated have the proficiency to work for our signatory contractors. Many have informed us that purchasing a sample test through the General Contracting Agency at a cost of around \$400.00 is the only way they could pass the test. This, however, does not assist them in performing in the real world and in fact compromises safety and quality. Many other states also have an educational standard requirement before allowing their electricians to be licensed.

Due to the nature of electrical work and that the possibility of catastrophic failure which could result in injury or death as a result of substandard quality of installation, I strongly feel that the minimum requirement of obtaining the electrical journeyman license should be elevated to include with the current standard of 10,000 hrs of field experience and completion of an apprenticeship program, of which there are three (IBEW, HEW and ABC) or complete the Electrical Installation and Maintenance Technology (EIMT) curriculum at the Community College. This allows a variety of accessible programs for anyone interested in a career in the electrical industry.

Sincerely,

Gerald H. Yuh
Business Manager / Financial Secretary
International Brotherhood of
Electrical Workers, Local Union 1186

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Founded 1889

PLUMBERS AND FITTERS LOCAL 675 UNITED ASSOCIATION



February 19, 2008

The Honorable Robert N. Herkes
State House of Representatives
State Capitol, Room 325
Honolulu, Hawaii 96813

Subject: Testimony in Opposition to HB 937 HD2 Relating to Electrical and Plumbing Trades

Dear Chair Herkes and Members of the Committee on Consumer Protection & Commerce:

My name is Vernon K. Ta'a and I am speaking on behalf of Mr. Reginald Castanares, Business Manager and Financial Secretary-Treasurer of the Plumbers and Fitters Union Local 675.

“Why are the Plumbers testifying on the Bill? It has nothing to do with Plumbers.”

Two years ago when the first bills were introduced, the intent and purpose were made very clear that Plumbers were not qualified to install, service and repair refrigeration and air-conditioning systems. We were pleased that the bills were not allowed to move forward.

Last session this bill was introduced with no reference to Plumbers. Our concern has remained the same. The intent to stop the Plumbers from doing what we have been doing for over 50 years has also remained the same. If you allow this bill to pass, we are certain that the proponents of this measure will push to have our Refrigeration and Air-conditioning mechanics become licensed electricians.

Real Intent expressed in an interview with Pacific Business News

In an interview with Pacific Business News in the March 2, 2007 issue, Mr. Gerald Yuh confirmed his real intent when he insisted that Plumbers should not be doing electrical work ..., because their licenses do not cover electrical work (attachment). We do electrical work only as it pertains to the installation of our equipment. We are not trying to do their work, we do not want to do their work but we are qualified to do what we do.

Long History of doing Refrigeration and Air-conditioning Work

In 1919, the Plumbers & Pipefitters Union Local 675 was the second union to be chartered in Hawaii. By March 1924, the first home refrigerators were advertised in Hawaii and in 1938 the first fully air-conditioned home was built.

In the 1940's, pneumatic controls (using compressed air systems) originally controlled air-conditioning and refrigeration systems. Over time, these systems became increasingly complex, moving from pneumatic controls to eventually a fully integrated computerized electronic system. On September 4, 1962, the highly technical nature of air conditioning and refrigeration required that we establish a five-year apprenticeship program specifically designed for air conditioning and refrigeration service and repair (attachment). Our apprenticeship program has been recognized as one of the top three apprenticeship programs in the nation.

Sunrise Analysis of a Proposal to Regulate Refrigeration & Air Conditioning Mechanics

In 1993, we proposed House Bill 2661 to regulate and license our refrigeration and ac mechanics. This legislative body requested a study be done by the State Auditor before any decision be made.

In a report to the Governor and the Legislature of the State of Hawaii dated October 1994, the State Auditor concluded that *licensing of air conditioning and refrigeration mechanics is not necessary*. (Report No. 94-15)

The Sunset Law says that professions and vocations should be regulated only when reasonably necessary to protect the health, safety, and welfare of consumers. In assessing the need for regulation, evidence of abuses is to be given great weight. The law also asks the Auditor to consider whether consumers are at a disadvantage in choosing the provider and the benefits and costs of regulation to taxpayers.

They found that the regulation of refrigeration and air conditioning mechanics is not warranted. There was little evidence that regulation is needed. They also found no documented evidence of abuses by refrigeration and air conditioning mechanics and that only a few states regulate them.

Conclusion:

We only oppose this measure because of the expressed intent to regulate our mechanics for doing electrical work in our specialized area. We would support this bill if it would recognize the study done by the State Auditor and exempt our mechanics from doing what we have been doing for over fifty years.

PACIFIC BUSINESS NEWS

Trade unions face off over standards for electricians

Pacific Business News (Honolulu) - March 2, 2007

by Linda Chiem

Pacific Business News

Hawaii electricians and plumbers are facing off over the issue of raising the minimum licensing requirements for electricians.

They are at odds over Senate Bill 1248 and House Bill 937, which would require all electricians to successfully complete an electrical theory course at an accredited academic or apprenticeship program in addition to participating in a five-year or 10,000-hour on-the-job training program that already is required to be licensed.

In addition, House Bill 938 is a measure that aims to establish a separate licensing board solely for electricians, who currently share a board with the plumbers under the state Department of Commerce and Consumer Affairs.

Gerald Yuh, financial secretary and business manager for the International Brotherhood of Electrical Workers Local Union 1186, is the author of the bills, which passed their first committee hearings last week.

Raising standards

Yuh said the goal of the legislation is to raise the minimum requirements to be a licensed electrician so the public can be protected from unqualified tradesmen doing electrical work.

"It's about providing a level of understanding on the engineering specifications and the hazards of electricity in the interest of safety," Yuh said. "This applies to those who want to be good electricians and it doesn't have anything to do with the plumbers."

But the plumbers oppose the legislation because they say it forces them to get additional training to be recognized for something they're already doing. Its members include plumbers who install refrigerators, air conditioners, garbage disposals and water heaters, all of which require some form of electrical wiring.

"We overlap and we do electrical work only as it pertains to the installation of our equipment," said Vernon Taa, legislative liaison with the Plumbers and Fitters Local 675 Union. "We're not trying to do his [Yuh's] work and what it is a jurisdictional dispute. Separating the boards, that's a danger to

the consumers as far as costs go. We've been doing this type of work for over 50 years and now he tells us we're not qualified?"

The plumbers contend that Yuh's bill is a move to steal work away from them, but Yuh insists that plumbers should not be doing electrical work in the first place, because their licenses do not cover electrical work.

"The fact remains, if private homeowners want to allow a plumber to do electrical work in their home that's really up to them, but it's not the place of the legislators to endorse that activity," Yuh said.

"The plumbers are trying to come into our world and [this bill] doesn't affect them at all. They don't have the license now and it's irresponsible."

Higher costs

As the debate grows increasingly contentious between the electricians and the plumbers, concerns are being raised that consumers will end up paying more for services.

For example, instead of paying a plumber to install a water heater, homeowners also would pay for an electrician to hook it up.

Sen. Sam Slom, R-Diamond Head-Hawaii Kai, voted against the bill, saying that it causes more harm than good.

"In my view, it increases costs to businesses because of these increased standards and it wouldn't do anything for public safety," he said. "It comes down to a turf battle and consumers are going to bear the brunt of it."

lchiem@bizjournals.com | 955-8042

AC, How It Changed Hawaii

By Herbert S.K. Kaopua, Sr., and Bob Hann

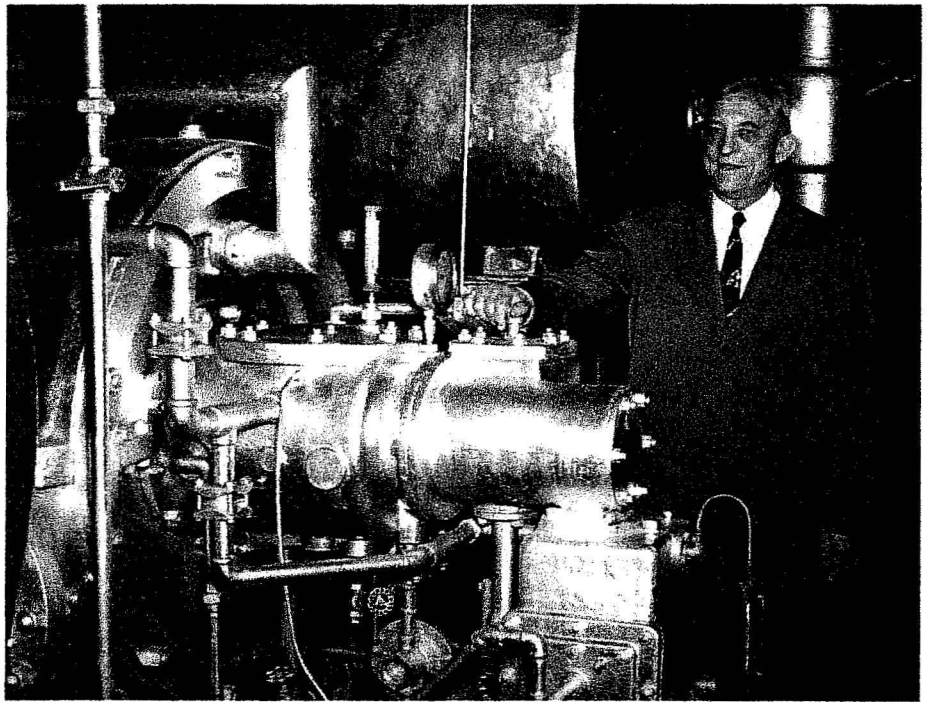
Air conditioning and refrigeration—without it, many of today's larger cities such as Dallas, Phoenix, and, of course, kamaaina favorite Las Vegas would be unbearably hot during parts of the year.

Perishable foods not grown in Hawaii would be unavailable.

Air conditioning has made the uninhabitable habitable, changing the way we design buildings, allowing for skyscrapers made of glass and subterranean structures spanning for miles. Meanwhile, refrigeration allows us in Hawaii to enjoy perishable delicacies from sashimi to strawberries.

A look back into history reveals some interesting facts about air conditioning and refrigeration:

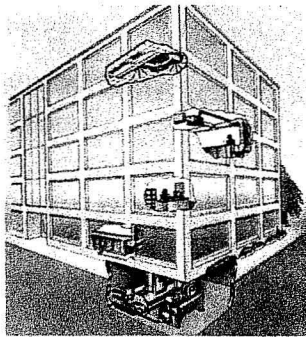
- The ancient Romans are credited with inventing the concept of air conditioning by circulating cold aqueduct water through the walls of the wealthy's homes to cool them.
- The first chemically chilled air is invented in 1820 when British scientist Michael Faraday discovered compressing and liquefying ammonia chilled air when the liquefied irritant is allowed to evaporate. Later in the 1800s, mechanical refrigeration is used to preserve meats and foods.
- Hawaii's first shipment of ice arrives from Boston through San Francisco aboard the brig Fortuno on Sept. 14, 1850.
- In 1902, Willis Haviland Carrier—considered the father of air conditioning—invents the first truly successful, safe cooling system that starts the science of modern air conditioning (or manufactured air, as it is first called). The motivation? To create a stable temperature and humidity level for a Brooklyn printing plant to ensure the four-color process



Willis Carrier, considered the father of air conditioning, with his chiller in 1922

- adheres correctly to the paper.
- On the mainland, air conditioning makes the jump from industrial and office work to movie theaters in 1911. In Hawaii around this same time, the very first air-conditioned buildings also are theaters. In fact, in 1912 or 1913 the Hawaiian Opera House uses electric fans to blow air over large tubs of ice to cool the facility.
- In 1919, Plumbers & Pipefitters Local 675 Union is chartered in Hawaii—the second union to establish itself in the territory. Without plumbers, no air conditioning.
- In Hawaii, home refrigerators are first advertised in March 1924.
- Air conditioning enters McNerny's store on Merchant Street in 1926 or 1927. Hawaii Theatre installs the first modern system in 1935. Queen's Hospital asthma ward installs air conditioning for medical purposes in 1936. Finally, the first fully air-conditioned home in Hawaii is built in 1938.
- In the 1940s, pneumatic controls (using compressed air systems) originally controlled air conditioning and refrigeration systems.
- In 1947, the McCully Times Supermarket opens, catering to local residents. What differentiates Times Supermarket from other grocery stores? The high-quality merchandise, competitive pricing, excellent customer service... and air conditioning. Oahu Sales installs the system, and today still services most of the Times Supermarkets.
- Plumbers are first called upon to install and service air-conditioning and refrigeration systems in the 1950s. Later, on Sept. 4, 1962 Plumbers & Fitters Local 675 adds a five-year course track specifically for refrigeration and air-conditioning apprentices.

- Bank of Hawaii decides to move from a pneumatic system to a fully electrical system in the late 1960s. Plumbers are forced to disassemble the master electrical master control panel because it is too large to move into the building. Today a desktop-sized computer runs this large building's air-conditioning system.
- In the 1970s, developers of the Hawaii Kai ridgeline offer air conditioning as an option, but homebuyers aren't interested. Later, in the 1990s, Schuler Homes and Gentry Homes begin the mass installation of air conditioning by offering central air and split AC systems as an option in their West Oahu developments such as Ocean Pointe in Ewa.
- Chlorofluorocarbon refrigerants, also known as Freon®, originally are the chemical of choice for refrigerant systems. However, these refrigerants with both chlorine and fluorine — known as chlorofluorocarbons (CFCs) — break up in the stratosphere due to ultraviolet radiation and release chlorine atoms that breakdown the ozone. CFCs are prohibited by the Montreal Protocol, which mandates a phase out beginning in 1989. Today systems are moving to using hydrofluorocarbons otherwise known as fluorocarbons (HFCs).



pneumatic controls, plumbers were a natural fit to service and repair these systems.

As air conditioning in commercial buildings took off in popularity, the same plumbers who were installing the systems were required to service them. Over time, air conditioning and refrigeration controls became their own specialty, as the systems became increasingly complex, moving

from pneumatic controls, to a combination of pneumatic and electrical controls, to eventually a fully integrated computerized electronic system.

One great example of this evolution begins in 1946, when Hawaii apprentice plumbers Harold Heide and Jarrad Cook joined forces to install plumbing in the new Aina Haina homes. Over time, they moved to installation and servicing of air conditioning systems, which would become the hallmark of this local company. Today, Heide & Cook specializes in air conditioning, fire sprinkler systems, sheet metal and, of course, plumbing.

With the highly technical nature of air conditioning and refrigeration, Plumbers & Fitters Local 675 has stayed in step with the ever-evolving systems, developing a five-year apprenticeship program on Sept. 4, 1962, specifically for air conditioning and refrigeration service and repair. This course includes 10 semesters of in-class training through the nationally recognized training Pearl City facility (with distance learning capabilities for neighbor island apprentices) and 10,000 hours of on-the-job training. Refrigeration and air-conditioning apprentices learn refrigeration controls, drawing interpretation, as well as electricity and electrical controls to prepare them to work with up to 480 volts that power these complex systems. This extensive training ensures those trained through the program provide the highest-quality, best-guaranteed labor available. Throughout this process the program provides the safety training needed for HIOSH (Hawaii Occupational Safety and Health) and other regulatory compliance.

So what is the future of air conditioning? Smaller control systems and wireless systems. Environmentally safe chemicals. New cooling options. Today, scientists are working to find better refrigerants and new cooling options such as the idea to use deep seawater pumped into downtown to cool office buildings. In addition, the industry is working to insure that our contractors and employees comply with the industry regulations to be environmentally responsible, by properly disposing of waste oil, used refrigerants and coil cleaning chemicals.

As we look to the future of air conditioning and refrigeration, one thing remains constant — the Plumbers & Fitters Union, in conjunction with the union affiliated contractors, is there every step of the way, educating our members to provide business and residents alike the most technically advanced and highest quality service available.

How much things have changed in just 100 years! With this evolution of air conditioning and refrigeration, one building trade stands out as evolving with it — the Plumbers & Pipefitters Union. Because of the materials used in refrigeration and air conditioning, and later the piping work required to disperse the cool air as well as for the

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Kaopua

Herbert S. K. Kaopua Sr. is the business manager and financial secretary for the Plumbers & Fitters Local 675. Bob Hann is the president of the Plumbing and Mechanical Contractors Association of Hawaii (PAMCA).



Hann



REFRIGERATION A/C FIVE-YEAR CURRICULUM RELATED AND HANDS ON

FIRST YEAR RELATED INSTRUCTIONS:

- RC1 Job Safety and Health
Related Math
Drug Awareness Seminar – 2.5 hours
Plus 28 hours of manipulative hands on training
- RC2 Drawing Interpretation
First Aid / CPR Certification – 7.5 hours
Plus 28 hours of manipulative hands on training

SECOND YEAR RELATED INSTRUCTIONS:

- RC3 Refrigeration Manual, Part 1
Plus 28 hours of manipulative hands on training
- RC4 Refrigeration Manual, Part 2
Plus 28 hours of manipulative hands on training

THIRD YEAR RELATED INSTRUCTIONS:

- RC5 Basic Electricity Manual
Plus 28 hours of manipulative hands on training
- RC6 Electric Controls Manual
Plus 28 hours of manipulative hands on training

FOURTH YEAR RELATED INSTRUCTIONS:

- RC7 Refrigerant Controls Manual
Plus 28 hours of manipulative hands on training
- RC8 Start, Test, and Balance Manual
Plus 28 hours of manipulative hands on training

FIFTH YEAR RELATED INSTRUCTIONS:

- RC9 Modern Refrigeration Manual
Plus 28 hours of manipulative hands on training
- RC10 Electrical Troubleshooting Stations
108 hours of combined related instructions and hands on training

TESTIMONY OF CAL KAWAMOTO

CHAIR HERKES AND HONORABLE MEMBERS OF THE HOUSE CONSUMER PROTECTION COMMITTEE GOOD AFTERNOON, MY NAME IS CAL KAWAMOTO CONSULTANT TO LOCAL 675 PLUMBERS & FITTERS UNION HERE IN OPPOSITION TO HB 937 HD 2.

IF THE INTENT OF THIS BILL IS TO RAISE THE MINIMUM REQUIREMENTS TO BE A LICENSED ELECTRICIAN AND DISQUALIFY OTHER TRADESMEN WHO HAS BEING DOING THIS TYPE OF ELECTRICAL WORK FOR THE LAST 50 YEARS. IT WOULD COST THE CONSUMER DOUBLE TO REPLACE A DISPOSAL, WATER HEATER, REPAIR OR INSTALL AIR CONDITIONERS, WATER SPRINKLER SYSTEM ETC. WITHOUT ANY COMPLING REASON. THE CONSUMER WOULD HAVE TO PAY AN ELECTRICIAN TO DISCONNECT AND HOOKUP BEFORE AND AFTER THE SERVICES OF THE PLUMBER IF THIS BILL MOVES FORWARD.

IF THIS BILL NEEDS TO MOVE FORWARD I SUGGEST IN SECTION 3 THE FOLLOWING WORDS: "This act does not affect rights and duties of other building trades whose duties include electrical work for the last fifty (50) years and have completed an accredited academic apprenticeship program covering the principles of electrical theory"---

PLUMBING & MECHANICAL CONTRACTORS ASSOCIATION OF HAWAII



PLUMBING AND MECHANICAL
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OF HAWAII

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GREGG S. SERIKAKU
EXECUTIVE DIRECTOR

Via Facsimile: 586-6161

February 15, 2008

Representative Robert N. Herkes, Chair
Committee on Consumer Protection and Commerce
House of Representatives
The Twenty-Fourth Legislature, Regular Session of 2008
State Capitol
Honolulu, HI 96813

Chair Herkes, Vice Chair McKelvey, and Members of the Committee:

SUBJECT: H.B. 937 HD2 Relating to Electrical and Plumbing Trades

My name is Gregg Serikaku. I am the Executive Director of the Plumbing and Mechanical Contractors Association of Hawaii.

The Association for which I speak is opposed to H.B. 937 HD2.

We do not feel there is a need to increase the licensing requirements for electricians. In fact, Hawaii's current licensing requirements are already some of the strictest in the nation and are more than sufficient to ensure the competency of licensed electricians.

Chapter 448E-Electricians and Plumbers, was specifically enacted in 1971 to ensure both the competency of licensed plumbers and electricians and to protect the safety and welfare of the general public, and has proven to work fine throughout the past 35 years.

We believe that HB 937 HD2 is simply an on-going attempt by the supporters of this bill to take away the incidental and minor electrical work customarily performed by many other construction trades during the normal course of work.

In other words, this bill is **an attempt to legislate trade jurisdiction.**

The Legislature should not be put in the awkward position of legislating trade jurisdiction in the State of Hawaii. In the past, the Legislature has always left this type of issue to be settled directly by the trades involved.

We therefore respectfully urge the committee to hold this bill.

Thank you very much for this opportunity to testify.

Respectfully yours,

A handwritten signature in black ink that reads "Gregg S. Serikaku".

Gregg S. Serikaku
Executive Director

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HAWAII ELECTRICIANS TRAINING FUND

Joint Apprenticeship Committee • Joint Training Committee • Joint Safety Committee

1935 HAU STREET, ROOM 301 • HONOLULU, HAWAII 96819-5003 • PHONE (808) 847-0629 • FAX (808) 843-8818

CPC Vice-Chair, Room 315

For Hearing on Tuesday, February 20, 2008, at 2:00 p.m. Conference Room 325
House Committee on Consumer Protection and Commerce

TO: Chair Herkes, Vice-Chair, Members of the House Committee on Consumer Protection and Commerce

RE: **SUPPORT OF HB937, HD2, RELATING TO ELECTRICAL AND PLUMBING TRADES**

My name is Tracy Hayashi, Apprenticeship Coordinator for the Hawaii Electricians Training Fund, testifying in support of HB937.

Our Inside Wireperson Program (Electrician Apprenticeship) consists of 5-years of school (800.00 hours) plus 10,000.00 hours of on-the-job work experience. We monitor and work with our signatory electrical contractors to rotate our apprentices in the different categories (work processes) of the electrical field by following a guide of recommended work processes hours so our apprentices are well-rounded and qualified to do any electrical installations. Our curriculum is from the National Joint Apprenticeship and Training Committee (NJATC) used nationwide by all International Brotherhood of Electrical Workers (IBEW) Joint Apprenticeship & Training Committee (JATC) programs. Upon completion of the 5-year program, the apprentice receives a certificate of completion recognized nationwide in any jurisdiction of the IBEW.

Our Electrical Union (L.U. 1186 IBEW) and Signatory Contractors assigned us the task to train and monitor new members/employees brought into our industry as journeyworkers through organizing a company or signing the referral books for employment as journeyworkers. These individuals are given an aptitude exam by the Local Union to see if they meet the basic proficiency skills of an electrician. Individuals not meeting the basic skills are referred to our office for enrollment into training classes/programs to up-grade their skills. Many of these individuals have no electrical theory or trade school background and lack the basic understanding of the electrical theory and the National Electrical Code (NEC). Furthermore, they have more than 5-years of work experience in the field and some were even the responsible person on the job with previous employers and performed sub-standard work in violation of the NEC.

In comparison, we have journeyworkers who completed and obtained their Associate of Science Degree in the Electrical Maintenance and Technology (EMIT) Program from the University of Hawaii System. Journeyworkers completing this 2-year program have a better understanding of the electrical theory and tend to have an easier time with the curriculum of our program and work assignments with our signatory contractors.

Hawaii is one of a growing list of thirty states requiring journeyworker electricians to take and pass an electrical certification examination to legally perform electrical work within their state. Some states also require related instructional hours as well as on-the-job experience as a pre-requisite for journeyworkers to obtain their state electrical license. Others states will approve

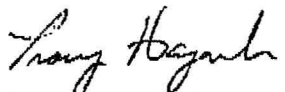
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**RE: SUPPORT OF HB937, HD2, RELATING TO ELECTRICAL AN PLUMBING TRADES
FEBRUARY 20, 2008
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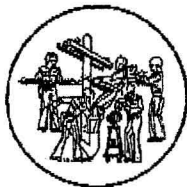
credit work hours with the completion of a trade school, apprenticeship program or other related instructions. They see the value in having some kind of theory or related instruction hours.

Based on my duties and responsibilities as Apprenticeship Coordinator, I can attest the NJATC/IBEW 5-year apprenticeship program of 800.00 instructional hours and 10,000.00 work hours far exceeds other electrical training programs. I strongly support HB937 for the inclusion of required curriculum along with on-the-job experience/training. It is important to have some kind of schooling background on basic electrical theory and a working knowledge of the NEC. HB937 will create a minimum requirement for schooling and will help to insure the safety of both the general public and the workers and prevent unsafe electrical conditions/hazards of sub-standard installation due to lack of knowledge.

Respectfully submitted,



Tracy Hayashi, Apprenticeship Coordinator
Hawaii Electricians Training Fund



HAWAII ELECTRICIANS TRAINING FUND

Joint Apprenticeship Committee • Joint Training Committee • Joint Safety Committee

1935 HAU STREET, ROOM 301 • HONOLULU, HAWAII 96819-5003 • PHONE (808) 847-0629 • FAX (808) 843-8818

DATE: February 19, 2008

TO: Consumer Protection & Commerce Vice Chair (VIA FAX: 586-6161)
For Hearing on Wednesday, February 20, 2008 at 2:00 p.m., in Room 325
House Committee on Consumer Protection and Commerce

RE: HB 937 HD2

Chair Herkes, Vice Chair McKelvey, and members of the House Committee on Consumer Protection and Commerce.

My name is Robert Aquino, and I am the Training/Safety Coordinator for the Hawaii Electricians Training Fund testifying in support of HB937 HD2.

HB937 HD2, I believe will provide the component that is lacking from the current requirement for the various electricians license. Our Wireperson Apprenticeship Program, as well as, other state approved apprenticeship programs, is required to supplement On-the-Job training with related instructional curriculum as referred to in the Administrative Rules, Title 12 Department of Labor Industrial Relations, Chapter 30.

When a person passes the State of Hawaii's electricians test, that person qualifies for their electrician's license. Since the test is based on the National Electrical Code (NEC), one would consider that person to be a qualified electrician. What is not revealed is that person's educational background on electronic or electrical theory. Attaining knowledge of the NEC is part of what an electrician should know. The NEC is a standard of how electrical systems, equipment and related materials shall be installed or implemented. The NEC is not a guide book of how to become an electrician.

One of my duties is to develop a class for our members who have field experience, but no formal electrical theory training. These members express the need for such a class. This revelation provides proof that field experience alone does not provide adequate training in the electrical industry. Our program prepares to elevate these members to a higher level of learning in both electrical principles and electrical safety. I hope that this committee will agree and support HB937 HD2.

Sincerely,

Robert Aquino
Training/Safety Coordinator
Hawaii Electricians Training Fund

00023

ATTN: CPC
Vice-Chair

TO: HOUSE SGT.-AT-ARMS OFFICE

For Hearing on Wednesday, February 20, 2008, at 2:00 P.M., Room 325

House Committee on Consumer Protection and Commerce

SUBJ: SUPPORT OF HB 937 HD2. RELATING TO ELECTRICAL AND PLUMBING TRADES.

Chair Herkes, Vice Chair McKelvey, and members of the House Committee on Consumer Protection and Commerce,

My name is David Lovelace and I have been providing, on a continued basis since 1991, Honolulu Community College assistance as an instructor in the field of Electrical Motor Control and the required State of Hawaii Electrical Code Competency Course. I hold a State of Hawaii Supervising Electricians License and a C-13 Specialty Electrical Contractors License.

My statement is in support of HB 937. The technical aspect of electrical installations is continually becoming more and more advanced as can be seen each and every time the National Electrical Code is updated. Just recently in Feb 2007, OSHA accepted recommendations from outside sources and technical advisors to adopt the publication of date for its enforceable standard. That action was enacted for enforcement in August of 2007. Within that document, the NEC, articles are written addressing the definition of a qualified person. That definition states that not only working knowledge is necessary, but also training in the hazards involved. Hence, the State of Hawaii's recognition of this required each an every licensed electrician to either attend a Continued Code Competency Course or to be tested, thru the approved testing organization, on the required goals set forth by the electrical committee to renew the required license. As an instructor for Honolulu Community College for the competency course, I have seen the results of licensed electricians who have only completed the State of Hawaii minimum requirements of 10,000 working hours without having completed an accredited academic or apprenticeship program. Many times I have had to stop my presentation of Code changes to explain electrical theory and the technical aspects surrounding the Code section and the adopted change. These licensed electricians with minimal academic background are also, by the State of Hawaii, allowed to apply and obtain an electrical contractors license. I have had owners of electrical contracting companies call me on my job to question whether a duplex receptacle is required to be mounted with the U-ground up or down. How then are these electricians meeting the requirement of the National Electrical Code's definition, contained in Article 100, for a "Qualified Person"? That definition requires "knowledge of electrical equipment and installations as well as safety training in the hazards involved". Very seldom in class electricians respond to even having knowledge of the National Fire Protection Association Publication 70E-2004, Standards for Electrical Safety in the Workplace mentioned in the FPN for a "Qualified Person". The State of Hawaii adopts on a routine basis the updated version of the National Electrical Code but should be questioned on fulfilling the first statement in the first article of the Code: "The practical safe-guarding of persons and property from hazards arising from the use of electricity". How does the State of Hawaii fulfill that requirement without requiring academic or apprenticeship completion as the basis for an electrical license?

David Lovelace

00024

mckelvey3

From: Ting, Gary H CIV NAVFAC HI, OPHCI44 [gary.ting@navy.mil]
Sent: Tuesday, February 19, 2008 6:25 PM
To: CPCtestimony
Subject: Testimony, HB 937 HD2, RELATING TO ELECTRICAL AND PLUMBING TRADES
Attachments: 70E training requirements.PDF

<<nec qualified person.PDF>> <<70E training requirements.PDF>>

Dear Sirs:

I would like to comment in favor of requiring formal training to be eligible to become a journey worker electrician.

1. Name: Gary Ting. Telephone 471-0069

I have been an Apprentice Instructor at Honolulu Community College for the past 20 years.

I am a licensed Professional Engineer.

I am making this comment as a private individual.

2. Committee: COMMITTEE ON CONSUMER PROTECTION & COMMERCE

3. DATE: Wednesday, February 20, 2008

4. TIME: 2:00 pm

COMMENTS

A. The electrical power industry is getting increasingly complex. There is a need for formal training and education for the journey worker electrician.

B. This is recognized in the recent National Electrical Code 2005 changes.

See attached. The National Electrical Code is the recognized authority for electrical construction in the State of Hawaii.

The National Electrical Code in turn refers to NFPA 70E, Standard for Electrical Safety, which is concerned about electrical safe work practices.

Section 110.6, Training Requirements, includes under training the categories of "classroom or on-the-job type, or a combination of the two."

Please note which is listed first.

C. A reading of both the National Electrical Code and the Standard for Electrical Safety shows that the requirements today are so voluminous that a person cannot comprehend it all by simply working in the field. Practical field experience must be combined with formal training.

D. In addition, the Electrical Industry is currently way past the "I do, you copy" state. The industry presently includes many new sources of power supply, ranging from emergency generators to Uninterruptible Power Supply (UPS) power (with rows and rows of very powerful batteries) to solar power to fuel cells. Each of these power sources if not installed correctly can be extremely hazardous, for both the worker, and our citizens and children.

In addition, the post 911 era includes the recognized need for safe and reliable electrical installations of critical operations power systems (COPS) for the Police Call Centers, Banking and Charge Card Computer Centers, Internet Centers, Department of Defense facilities, Hospitals, and on and on. The technologies involved with these installations cannot be learned from the "senior" worker, In the 2008 edition of the National Electrical Code, there is a new Article including requirements for these facilities.

Respectfully submitted,

Gary Ting

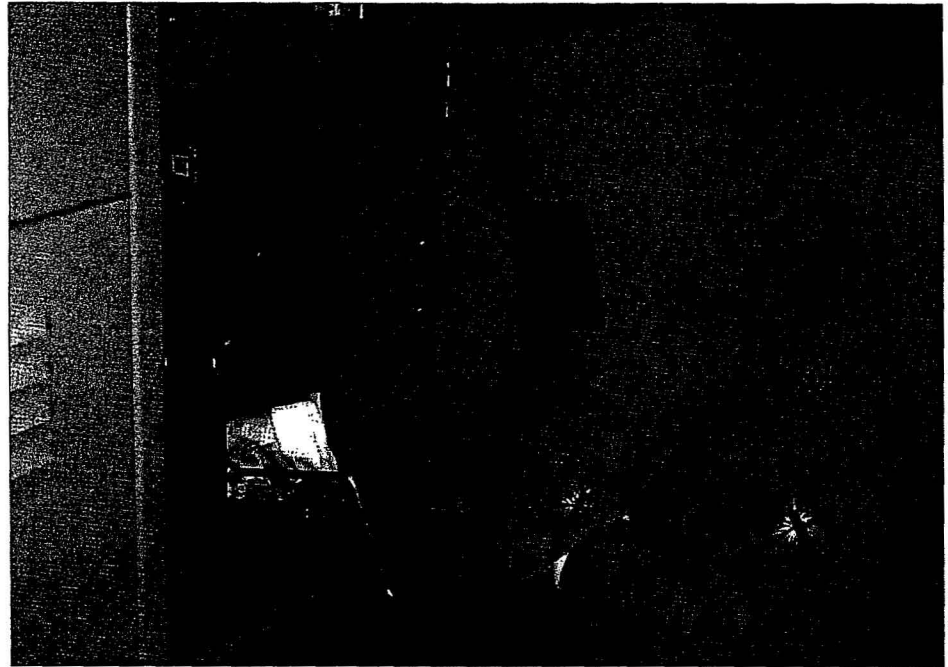
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Definitions

Qualified Person
NEC, p. 17

Proposal 1-130 Log 2827
ROP, p. 123

Comment 1-158 Log 992
ROC, p. 44



Analysis and Effect

The term *qualified person* is used throughout the *NEC*; however, it is apparent that it is not well understood by some in the industry. The addition of a new fine print note is intended to clarify the term by providing a reference to a well-recognized document that includes important information regarding training requirements and qualified persons. Safety is a critical aspect that relates to the design, installation, operation, and maintenance of electrical systems. The definition of qualified persons and the reference to NFPA 70E emphasize the importance of adequate safety training for those individuals who are exposed to dangers inherent with the use of electrical energy. There are too many examples of accidents resulting from people working on energized equipment who did not have adequate skills or understanding of the situation to take the necessary precautions to protect themselves. Section 110.6 of NFPA 70E is entitled "Training Requirements" and 110.6(D) gives an extensive coverage of a qualified person. Changes in the *NEC* that have resulted in the present description of a qualified person and the reference to NFPA 70E make a clear statement as to the importance of the term *qualified person* as it is used in the *NEC*.

Change at a Glance
A new fine print note has been added following the definition of *qualified person* in Article 100.

Code Language

100
Definitions

Qualified Person. One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved.

FPN: Refer to NFPA 70E-2004, *Standard for Electrical Safety in the Workplace* for electrical safety training requirements.

Fuse. An overcurrent protective device with a circuit-opening fusible part that is heated and severed by the passage of overcurrent through it.

FPN: A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit.

Switching Device. A device designed to close, open, or both, one or more electric circuits.

Circuit Breaker. A switching device capable of making, carrying, and interrupting currents under normal circuit conditions, and also making, carrying for a specified time, and interrupting currents under specified abnormal circuit conditions, such as those of short circuit.

Cutout. An assembly of a fuse support with either a fuseholder, fuse carrier, or disconnecting blade. The fuseholder or fuse carrier may include a conducting element (fuse link), or may act as the disconnecting blade by the inclusion of a non-fusible member.

Disconnecting (or Isolating) Switch (Disconnect, Isolator). A mechanical switching device used for isolating a circuit or equipment from a source of power.

Disconnecting Means. A device, group of devices, or other means whereby the conductors of a circuit can be disconnected from their source of supply.

Interrupter Switch. A switch capable of making, carrying, and interrupting specified currents.

ARTICLE 110 General Requirements for Electrical Safety-Related Work Practices

110.1 Scope. Chapter 1 covers electrical safety-related work practices and procedures for employees who work on or near exposed energized electrical conductors or circuit parts in workplaces that are included in the scope of this standard. Electric circuits and equipment not included in the scope of this standard might present a hazard to employees not qualified to work near such facilities. Requirements have been included in Chapter 1 to protect unqualified employees from such hazards.

110.2 Purpose. These practices and procedures are intended to provide for employee safety relative to electrical hazards in the workplace.

110.3 Responsibility. The safety-related work practices contained in Chapter 1 shall be implemented by employees. The employer shall provide the safety-related work practices and shall train the employee who shall then implement them.

110.4 Multiemployer Relationship.

(A) Safe Work Practices. On multiemployer worksites (in all industry sectors), more than one employer may be responsible for hazardous conditions that violate safe work practices.

(B) Outside Personnel (Contractors, etc.). Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the on-site employer and the outside employer(s) shall inform each other of existing hazards, personal protective equipment/clothing requirements, safe work practice procedures, and emergency/evacuation procedures applicable to the work to be performed. This coordination shall include a meeting and documentation.

110.5 Organization. Chapter 1 of this standard is divided into three articles. Article 110 provides general requirements regarding the preparation for, and conduct of, work performed on or near electrical components regardless of whether such components are energized or not. Article 120 emphasizes working deenergized and describes the work practices used to deenergize electrical components to put them into an electrically safe work condition before attempting work on or near them. Article 130 provides requirements for working on or near electrical components that have not been placed into an electrically safe work condition.

110.6 Training Requirements.

(A) Safety Training. The training requirements contained in this section shall apply to employees who face a risk of electrical hazard that is not reduced to a safe level by the electrical installation requirements of Chapter 4. Such employees shall be trained to understand the specific hazards associated with electrical energy. They shall be trained in safety-related work practices and procedural requirements as necessary to provide protection from the electrical hazards associated with their respective job or task assignments. Employees shall be trained to identify and understand the relationship between electrical hazards and possible injury.

(B) Type of Training. The training required by this section shall be classroom or on-the-job type, or a combination of the two. The degree of training provided shall be determined by the risk to the employee.

(C) Emergency Procedures. Employees working on or near exposed energized electrical conductors or circuit parts shall be trained in methods of release of victims from contact with exposed energized conductors or circuit parts. Employees shall be regularly instructed in methods of first aid and emergency procedures, such as approved methods of resuscitation, if their duties warrant such training.

(D) Employee Training.

(1) Qualified Person. A qualified person shall be trained and knowledgeable of the construction and operation of equipment or a specific work method and be trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method.

(a) Such persons shall also be familiar with the proper use of the special precautionary techniques, personal protective equipment, including arc-flash, insulating and shielding materials, and insulated tools and test equipment. A person can be considered qualified with respect to certain equipment and methods but still be unqualified for others.

(b) An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified person shall be considered to be a qualified person for the performance of those duties.

(c) Such persons permitted to work within the Limited Approach Boundary of exposed live parts operating at 50 volts or more shall, at a minimum, be additionally trained in all of the following:

- (1) The skills and techniques necessary to distinguish exposed energized parts from other parts of electrical equipment
- (2) The skills and techniques necessary to determine the nominal voltage of exposed live parts
- (3) The approach distances specified in Table 130.2(C) and the corresponding voltages to which the qualified person will be exposed
- (4) The decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely

(2) Unqualified Persons. Unqualified persons shall be trained in and be familiar with any of the electrical safety-related practices that might not be addressed specifically by Chapter 1 but are necessary for their safety.

110.7 Electrical Safety Program.

(A) General. The employer shall implement an overall electrical safety program that directs activity appropriate for the voltage, energy level, and circuit conditions.

FPN: Safety-related work practices are just one component of an overall electrical safety program.

(B) Awareness and Self-Discipline. The electrical safety program shall be designed to provide an awareness of the potential electrical hazards to employees who might from time to time work in an environment influenced by the presence of electrical energy. The program shall be developed to provide the required self-discipline for employees

who occasionally must perform work on or near exposed energized electrical conductors and circuit parts. The program shall instill safety principles and controls.

(C) Electrical Safety Program Principles. The electrical safety program shall identify the principles upon which it is based.

FPN: For examples of typical electrical safety program principles, see Annex E.

(D) Electrical Safety Program Controls. An electrical safety program shall identify the controls by which it is measured and monitored.

FPN: For examples of typical electrical safety program controls, see Annex E.

(E) Electrical Safety Program Procedures. An electrical safety program shall identify the procedures for working on or near live parts operating at 50 volts or more or where an electrical hazard exists before work is started.

FPN: For an example of a typical electrical safety program procedure, see Annex E.

(F) Hazard/Risk Evaluation Procedure. An electrical safety program shall identify a hazard/risk evaluation procedure to be used before work is started on or near live parts operating at 50 volts or more or where an electrical hazard exists.

FPN: For an example of a hazard risk procedure, see Annex F.

(G) Job Briefing.

(1) General. Before starting each job, the employee in charge shall conduct a job briefing with the employees involved. The briefing shall cover such subjects as hazards associated with the job, work procedures involved, special precautions, energy source controls, and personal protective equipment requirements.

(2) Repetitive or Similar Tasks. If the work or operations to be performed during the work day or shift are repetitive and similar, at least one job briefing shall be conducted before the start of the first job of the day or shift. Additional job briefings shall be held if significant changes that might affect the safety of employees occur during the course of the work.

(3) Routine Work. A brief discussion shall be satisfactory if the work involved is routine and if the employee, by virtue of training and experience, can reasonably be expected to recognize and avoid the hazards involved in the job. A more extensive discussion shall be conducted if either of the following apply:

- (1) The work is complicated or particularly hazardous.
- (2) The employee cannot be expected to recognize and avoid the hazards involved in the job.

FPN: For an example of a job briefing form and planning checklist, see Annex I.