

NDIA ADDRESS

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Thank you for that nice introduction. It is indeed a pleasure and an honor to be here today and to contribute to this ongoing conversation about how all of us can work together to improve the products and services we provide our nation's defenders and first responders. Underwriters Laboratories has a long history supporting national defense and homeland security. We also have a long history with many of the companies and organizations here today, both in the private sector and public security arenas. At the same time, we have little direct NDI experience and our Homeland Security business is relatively new so what I can best do today is to share with you our business model for our Core Business and hope that there is a Best Practice or two that can be directly applicable to your work.

Our security division was founded in the 1920s during the gangster wars in Chicago, when we published standards for stronger safes, more secure locks and bullet-resistant glass. During War World II, UL was classified as an "essential industry". We tested devices to protect US plants from sabotage and trained military personnel in fire protection and general safety.

Today, we continue to work with NDI affiliates, auditing security systems at facilities, undertaking basic research to advance the safety and training of first responders, and, of course, testing and certifying products that contribute to the safety and well-being of those who protect us and the public at large. It is a part of our business of which we are very proud.

As most of you know, UL is an independent, not-for-profit product testing and certification organization dedicated to public safety. For over a hundred

years, UL has played a central role in creating and maintaining a culture of product and public safety in the marketplace — a global culture that extends to designers and engineers, manufacturers and their suppliers, wholesalers and retailers, and to the consumers who purchase these products.

Today, I would like to explain to you how this safety model works and share with you some valuable lessons we've learned over the years. I will also suggest ways this model could be applied throughout defense and homeland security, to assure quality and sustainability in a competitive market. In fact, I do think that "quality and sustainability" go hand-in-hand with safety..

UL first got into the testing and certification business over a hundred years ago. It all started at the 1893 World's Fair, the Columbian Exposition in Chicago. One of the main attractions at the exhibition was the Palace of Electricity. This was a big deal. For the first time in history, the harnessing of this new technology called electricity was being displayed for the entire world to see.

The problem was, fires were breaking out all over the place. Frequently. So the company that was insuring the Palace of Electricity called in a young engineer from Boston, William Henry Merrill to address the problem.

Merrill brought with him a set of "best practices" for wires, switches and insulation that he applied throughout the exhibition, which, in turn, became a huge success in showcasing this new technology. Pretty soon manufacturers found out that the young engineer was doing this kind of work, so they would bring their products to him to make sure they were safe. That's how UL got started and how William Merrill became our founder and first president.

I mention our founding because it clearly demonstrates the natural formation of an environment that ensures quality, sustainability and safety. On the one hand you had manufacturers who wanted to sell this new technology, but on the other hand you had the authorities having jurisdiction — the insurance companies, the

building owners, and ultimately, the end-users, who needed to know that the product works safely. As an independent voice, UL was able to bridge that gap and facilitate the market.

The key, then, to creating and maintaining a culture of product and public safety is the complete participation and collaboration of all members of the marketplace.

Essential, too, is the right private-government partnership. In the US the Consumer Product Safety Commission has broad latitude to mandate safety standards and testing. However, they have always had the perspective that voluntary industry compliance to standards and independent third party testing is preferable to government mandated standards and testing; always with the 'big stick' of government mandate should industry fail to do the right thing. Thus, CPSC always states their policy that compliance to standards and independent conformity assessment testing is 'Voluntary but not Optional'. It is an excellent working model that protects the public, ensures a level playing field in the market, and leaves business unfettered to innovate.

The critical elements involved in assuring product safety in a competitive market are:

- the development of safety standards to protect those who use the product.
- conformity assessment systems which test products against those standards and certify that they are compliant.
- Rigorous factory follow-up services to confirm continued compliance after certification is obtained

- rigorous anti-counterfeiting efforts to protect the certification, the manufacturer who invests in it, the authorities having jurisdiction who demand it, and the end user who depends on it.
- and finally, education and training throughout the marketplace.

You can think of standards as the 'rules of the game' and conformity assessment and follow-up services as the 'referees'. If you imagine a football game with no rules and no referees then you have a good picture of what many commercial markets would look like without standards, conformity assessment and follow up services – especially in a rapidly globalizing market with many emerging country participants/

Let's take a closer look at each of these elements and the role they play in the safety model. First, the development of standards.

A standard is a set of requirements or codes to improve a product's safety and, in some cases, efficacy as well. A standard takes into account product usage, the environment under which it will be used, and the harsh conditions it may encounter and still remain functional. This is true for the motor of a vacuum cleaner, the sprinkler head of a fire suppression system or the electrical safety of a string of decorative lights – one that can work in a Minneapolis Christmas and a Miami Christmas. Standards can be broadly encompassing – for example a DVD Player standard would include electrical safety, mechanical safety to ensure that small fingers don't get injured by the moving parts, and EMC emission and susceptibility – perhaps performance testing too.

Standards allow manufacturers to confidently invest in product development knowing they will have a market that trusts the safety and efficacy of their products. Standards increase competition and encourage innovation. Standards level the playing field. When all products meet certain requirements, price and

special features become the points of differentiation, rather than whether they are safe for use.

In the past, UL wrote and published standards in a more or less closed forum. In the last 10 years or so, this process has become much more open. Today, more and more standards are being written by committee. Technical panels, consisting of government, industry, consumer, and UL representatives, are meeting together to develop and evolve the standards. This is a good thing. Collaboration and participation is encouraged at every level in the development of safer products.

The first step in determining a standard is, then, assembling an expert panel who will then bring the knowledge needed to create the best set of requirements to achieve the goals of quality, sustainability and safety. A standard must be rigorous and practical — in that it has real world application, so manufacturers know they can practically produce a product that conforms to the standard. We have found that when we bring all stakeholders together, they are quite willing to put all their thoughts, opinions and ideas on the table and go through the pull and tug process of working toward the best solution. By achieving consensus, participants go away from the process saying 'maybe I didn't get everything I wanted, but I have to admit that we ended up with the best set of requirements'. And once a standard is published, all of us continuously look at real world application and new technologies that can change and improve the standard. Standards are living documents.

Once a standard is accepted the next element in our safety model comes into play, Conformity Assessment.

Conformity Assessment is the process of determining that a product conforms to a standard and that it continues to remain compliant. There are six functions involved in Conformity Assessment:

The testing function involves the tasks that gather and record the data needed to make determinations of compliance. The tasks include, but are not limited to developing a test plan, conducting laboratory testing, recording test results, making physical measurements of product characteristics and reviewing markings and accompanying documents. Consideration must also be given to the need for accreditation of the laboratories conducting the testing. Laboratory accreditation is essential to ensure confidence in and consistency of test results.

The determination of compliance function compares the information and data gathered during testing to the technical requirements to make a decision if that information and data demonstrates compliance with requirements.

Conformity can be self-declared or assessed by 3rd parties. The form of this is a suppliers declaration of conformity when done by the manufacturer and the certification function – a Mark - when conducted by an independent third party or government. This attestation normally takes the form of a supplier's declaration of conformity document when the conformity assessment is conducted by the first party and a certification mark when issued by an independent third party. When the government is the conformity assessor the attestation can come in a variety of different forms such as formal letters from regulatory agencies and/or on product marks.

Factory inspection is a pre-market mechanism that confirms compliance of on-going production. It usually involves physical inspection of products in production, verifying components, evaluation of production testing equipment/procedures and a review of the quality system its implementation and, often, sample testing. Results of factory inspection can be used to prompt/direct corrective actions or even to stop shipments when needed.

Market Surveillance is a post-market function directed at validating the conformity of products that are available in the market. Tasks include testing and inspecting products obtained from the market to verify their compliance with technical requirements and the attestation of conformity made by the supplier, independent third party or government following the initial determination of compliance. Results of market surveillance can be used to prompt corrective actions, improvements in the conformity assessment system and/or technical requirements when needed.

Corrective action is the function that addresses tasks involved with addressing non-conforming products before they reach the market as well as misuse of the attestation of conformity. The tasks involved may include issuing public notices, conducting recalls and/or restricting the use of certification marks.

UL has conducted conformity assessments for over 70,000 manufacturers in 96 countries. In 2005 alone UL staff evaluated over 19,000 different types of products. We also conducted over 500,000 on-site factory follow-up visits to check on manufacturers' continuing compliance with product certification requirements.

Conforming to standards and conformity assessments require significant investments in time and money. For this reason, it is extremely important to protect those who play by the rules from those who don't.

Trademark counterfeiting is estimated at \$500 billion annually or roughly 5%-7% of global trade. Counterfeiting is a growing threat to every industry. I can tell you, UL is an organization that goes to great effort and expense to stop it.

Our Anti-Counterfeiting Operations has two main objectives: first, to help protect the welfare and safety of consumers around the globe, and second,

to protect the integrity of the UL Mark and all that it stands for. UL does not tolerate the counterfeiting of its Marks and takes swift and definite action against those engaged in this criminal activity. Consumers and our customers should expect their safety certifier to have a zero-tolerance policy when it comes to counterfeiting.

UL has one of the most comprehensive intellectual property training programs in the world: We train personnel at 40-50 US Customs ports every year and we conduct law enforcement training seminars around the globe. Our aggressive program has trained over 2500 law and code enforcement officials since our program's inception in 1995. On average, there are more than 100 US Customs seizures each year of products bearing counterfeit UL-marked products—with retail values estimated at over \$12 million. Our training programs are working.

We are taking the fight to the counterfeiters – working on the task forces of the FBI, Interpol, the World Customs Organization, and the International Trademark Association. We are involved in ongoing surveillance and raids – striking at the heart of the problem in China and South America. We are also partnering with the Royal Canadian Mounted Police combating counterfeits in their marketplace. And we're working closely with our customers and industry trade associations to help them understand the scope of this problem and assist them in the development of their own anti-counterfeiting programs.

Finally, yet equally important in our safety model, is the education and training of each and every entity in the marketplace, from manufacturers and their suppliers, to acceptance authorities, to end-users.

UL University offers our customers over 1,500 courses providing safety standards training in areas such as Medical Devices, Medical Software,

Industrial Control Panels, NEC, Plastics, Fire Safety, Hazardous Locations, Quality Training, OSHA, ITE and many more. We have a Hazard-Based Safety Engineering curriculum that helps engineers design safety into products by anticipating user behavior and related hazards. We teach our customers how to integrate quality and safety into their products by design.

For acceptance authorities, we provide seminars that emphasize the importance of purchasing products that are certified as compliant with safety standards; what to look for when buying or receiving products covered by UL requirements; and how to detect and prevent counterfeiting of the UL Mark.

And for end-users, the general public, we utilize mass media, we conduct in-store promotions; we go into schools and universities with consumer education and awareness programs and we support programs that teach safety; how to use these products safely; even, how to live safely, at home, at work and in public spaces. For example, we support the Center for Campus Fire Safety which teaches young people how to avoid dorm fires, how to escape them when they occur and how to use basic safety equipment like a fire extinguisher.

This is our model for assuring safety in a competitive market. At UL, we are incredibly proud of our role in bringing safety to the marketplace and the countless lives that have been saved and injuries that have been prevented here at home and around the world. It is a model that has proven to be extremely effective over time. And it is a model that we believe can be used by defense and homeland security to help assure quality and sustainability in a competitive market.

Recent events both at home and abroad have put immense pressure on the NDI community and have created an environment that can affect the performance and life-cycle costs of products. Namely:

- a high demand for new products and services

- a rush to market to meet that demand
- and the deployment of existing products in environments and for usage for which differ from their original design intent.

The DoD, for the first time last year, spent more on maintenance and repair than on procuring new equipment. While certain performance issues may be unavoidable in these unpredictable times, it can be argued that with a more rigorous infrastructure in place, many instances of poor performance could be mitigated — if not immediately, then quickly.

Now I want to say that this is not the first time UL has presented the inner workings of product and public safety to the defense and homeland security industry. On many occasions, Federal officials have come to our offices to learn about the regulatory infrastructure that fosters safety. We have heard many times, “This is what we need” and “How can we do that?” And we say, all you have to do is to determine that this is what you want. You are the manufacturers authorities having jurisdiction and, just as the insurers and building owners told the electrical manufacturers decided over a hundred years ago, you too can demand that the products and services your industry produces and uses meet a set of requirements, a standard, that can be tested and certified, which will assure quality and sustainability in a competitive market.

Clearly the national defense industry is different from the civilian marketplace. And we recognize a very significant difference between defense and homeland security. That being said, however, there is an infrastructure in place, as I have just shown you, which can conform to the unique needs of defense and homeland security. An infrastructure that can help the industry produce standards, test for compliance, prevent counterfeiting, and educate and train all entities involved in defense and homeland security.

So let's take a look at our safety model once again and discuss ways that it can be applied to the NDI community. First, the development of standards.

The first thing NDI can do is review applicable and existing private sector standards and technical regulations that cover specific types of usage beyond typical commercial application. Where standards lack requirements for such usage, new ones can be developed.

Second, agree on and create conformity assessment and follow-up service models that suit your industry.

Third, agree on and create a Marking system that suits your industry.

In the safety model, standards often are developed through balanced, consensus-based, and transparent forums. This is a time-consuming process, but one that is right for the private sector— not necessarily for your industry.

For reasons of both speed and security, standards can be developed in a closed forum. The companies and organizations here today represent world leaders. Ten of your people could sit down and in the course of a few months develop appropriate requirements that address usage, environment, life cycle and other objectives.

In some cases, for security reasons, a standard may never be openly published. However, it is advisable, whenever possible, to make a standard as open as possible — available to as many companies as possible. Competition leads to innovation and innovation ultimately drives down costs. Additionally, published standards send two very clear signals to the business community. One, that everybody will be producing to the same standard, and two, there will be a readily accepting market for their products. Every

time you publish a standard you are assuring quality, sustainability and safety in that market.

There is one more thing I would like to say about standards developed for Homeland Security. In addition to requirements that address functionality, product safety requirements should be part of the standard. Those who have the authority to purchase homeland security products — such as fire departments, airport authorities, and transportation authorities, at the local, state, and federal levels — need to know that the products they are using are not only effective, but also that they will not cause harm to the general public from their usage. In a recent poll, ninety-seven percent of electrical, building and fire AHJ's, ninety-seven percent, said they can accept UL certified products without additional steps. When they see UL, and they know it meets their safety requirements.

Conformity Assessment systems in the NDI community, like developing standards, may vary from product to product. When conformity assessment is desired we would see a two-track solution; using third parties like UL for Safety, Environment and Life Cycle Assessment and using DoD and DoE facilities for assessing functionality. Why do we recommend this approach? Simply, it is to apply the best resources to the task. For example to assess the functionality of products such as CBRNE detection devices there are only a few places in the US where you can test a biological detection device. As much as we are committed to safety I can say that neither UL nor anyone else in our industry is likely to get excited about testing with Anthrax and I suppose that you would also prefer that we not have such materials in our labs. Once functionality is established, an identical device should be tested for safety. Will the device work 24/7. Can it handle electrical surges? Will it cause shock or fire if it gets wet? Is the mounting device sufficient to

protect those who walk under it? These are all issues that need to be considered when deploying these types of products in public spaces.

In most instances, where product contracts will be awarded to multiple vendors, it is advisable to utilize 3rd party conformity assessment, to verify consistency in the quality of all product coming off the line.

3rd party Conformity Assessment brings value to all members of the NDI community. For manufacturers, it enables International Market Access and provides continued assurance that products will be accepted by AHJs and other stakeholders. For AHJs, 3rd party Conformity Assessment provides a “level-playing field” of proven requirements instead of manufacturer assertions and unverifiable performance claims. And for Homeland Security and Defense entities, requiring 3rd party Conformity Assessment ensures performance-based standards and related requirements are consistently met for products. And, as I have stated, this is not re-inventing the wheel. Ready-made 3rd party Conformity Assessment processes are available today, into which DHS and DoD may plug in its broad set of needs and specify products that meet listing requirements.

Now let me talk about counterfeiting and how it could affect your community. Today, in China, a sprinkler head is being manufactured with the UL mark on it that looks exactly like the sprinkler heads of legitimate suppliers. They are being installed in buildings but they don't work in extreme environments – like in a fire. Which is quite a scary thing. If a group of unseemly players takes the time to knock off a product that costs a dollar fifty, what's to stop a counterfeiter from knocking off a five thousand dollar box that intended to protect Homeland Security. Especially in the Homeland Security marketplace, it is essential that an anti-counterfeiting program be put in place to protect the public and the legitimate players in the market.

Education and training is the glue that holds our safety model together, that keeps everybody working on the same page. And it should play an important role in maintaining quality throughout your marketplace.

As I mentioned at the beginning of my address, UL has a long history supporting defense and homeland security and we continue to be an active player in this arena. We believe this role can be expanded. We have an infrastructure in place — the resources, facilities, people and processes — that can help the NDI community reach its goal of sustaining quality in a competitive market.

Now I realize a presentation such as this perhaps raises more questions than it does provide solutions. So I look forward to answering some of your questions, along with Dr. McQueary, after his presentation. But before I close, I just want to say, and I think I can speak for everyone here today, and say that nothing is more important than providing our war fighters and first responders with the highest quality equipment and services they need to accomplish their missions and which will protect them in the process. Nothing is more important than protecting citizens with the products and services we all need to keep us as safe and secure as possible here at home. Anything less is a disservice to those who put their lives at risk and to the American taxpayers who pay for the products and services that we provide.

I will say it once again. The organizations here today represent world leaders. Your ingenuity, resourcefulness and dedication continue to produce technological advancements that provide an extraordinary service to our country.

I truly believe that working together we can create, maintain, and sustain a culture of quality that continuously and predictably produces products and services that meet the needs of those who protect us. Thank you