

## **IHMM Spotlight Interview with Robert (Bob) Richard, CDGP**

The Institute of Hazardous Materials Management (IHMM) is featuring Robert “Bob” Richard. He joined Labelmaster Services as Vice President for Regulatory Affairs in October 2010. Bob provides dangerous goods regulatory assistance to customers worldwide by drawing on his vast experience, knowledge of the hazardous materials regulations and extensive network of dangerous goods professionals worldwide.

From 2006-2010, Bob served as the Deputy Associate Administrator for Hazardous Materials Safety with the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the U.S. Department of Transportation, where he was responsible for directing approximately 150 hazardous materials transportation specialists and the day-to-day operation of the U.S. Hazardous Materials Transportation Safety Program, including overseeing the regulatory development, technical review and classification, international standards, outreach, special permits and approvals and enforcement offices. In this position Bob was involved in the development of domestic and international regulations and gained not only an understanding of the regulations but the intent and meaning behind the words.

Bob was one of IHMM’s 30<sup>th</sup> Anniversary Panelists at “The Pillars of Change” Symposium held in New Orleans in August.

### **IHMM: How did you begin your career and what motivated you to pursue your career in this field?**

**[Bob Richard]:** I initially attended the New Jersey Institute of Technology with the goal of studying engineering. I wasn’t sure whether I wanted to be a Chemical Engineer or Industrial Engineer. A course in fluid mechanics helped me to decide that perhaps chemical engineering was not my choice and I subsequently completed my undergraduate degree in Industrial Engineering. I really wanted to get into a position where I could enhance operational efficiency helping companies to be more efficient using operations research and skills learned in my industrial engineering studies. I applied for several jobs but ended up accepting a job with the Department of the Navy with responsibility for developing safety procedures, conducting training courses and auditing operations to identify safety deficiencies. I travelled worldwide and served as a technical representative aboard a number of combat ships. It wasn’t until DOT proposed sweeping changes to the Hazardous Materials Regulations in the early 90s that I became involved in the transport of hazardous materials. Honestly, no one else wanted to get involved.

I met Alan Roberts who was the head executive running the Hazardous Materials Safety Program for DOT at a conference that I attended at the last minute because my boss had another commitment. He liked my presentation so much that he suggested that I apply for a position (Assistant International Standards Coordinator) in his office. I applied and was selected. I eventually rose to the position of Deputy Associate Administrator for Hazardous Materials Safety with the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the U.S. Department of Transportation, where I was responsible for directing approximately 160 hazardous materials transportation specialists and the day-to-day operation of the U.S.

Hazardous Materials Transportation Safety Program, including overseeing the regulatory development, international standards, outreach, special permits and approvals and enforcement offices.

I had the great honor of serving as the Chairman of the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods, and as the chairman and vice chairman of the ICAO Dangerous Goods Panel. I also lead US delegations to the International Maritime Organization Dangerous Goods, Solid Cargoes and Containers Sub-Committee. Now I help clients navigate the daunting challenges of compliance and shipping their hazmat safely, compliantly and efficiently.

**IHMM: If you are speaking to a group of college students what would you say about your profession?**

**[Bob Richard]:** I think the world of dangerous goods is really quite interesting. It takes a special type of person because the aim of our trade is to prevent bad things from occurring so if nothing bad happens then you can claim success but your managers may not always understand what you do. When I served as a regulator within the DOT, I told my staff “We have a noble mission. We keep America safe and ensure products get to their destination intact and efficiently.” It can be quite rewarding knowing that your efforts make a difference. Some of us refer to ourselves as “hazmat geeks” because we love what we do. I remember once introducing myself at a hazmat conference by stating: “I am a hazmat professional and I am Cool.” I asked everyone in the audience to repeat the statement about themselves. The role of the dangerous goods professional in reducing risk and preventing incidents can’t be taken for granted and continues to be a critical component to our Nation’s safety and vitality. Dangerous goods professionals are on the front line of risk reduction and protecting the public and our economy from the inherent risks posed by hazmat during transportation.

**IHMM: What types of skills or training are required for a Dangerous Goods Professional?**

**[Bob Richard]:** I would have to say that there is no one set of skills that are required. It really varies. While having a science and technology background is useful, I have worked with folks that had degrees in English, business and economics that were really successful dangerous goods professionals. Having strong organizational and communication skills is a plus.

**IHMM: What have been your biggest challenges that you have faced with your efforts to enhance and ensure protection to the public from dangerous goods?**

**[Bob Richard]:** One of the biggest challenges was dealing with political pressure. When an incident occurs or something goes wrong people want to blame somebody. Politicians typically want to invoke more regulations. More regulation is not always the answer and can in some cases be detrimental because they pose unnecessary burden on those that are doing a good job and have a positive safety culture while the cheaters that put us all at risk continue ignoring the regulation claiming they are too complex or excessively costly. When an incident occurs one has to step back and analyze the root causes and contributing factors. People who intentionally violate regulations must be dealt with a certain way while those that make an honest mistake or misinterpret regulations in another manner. Human behavior and error is a major risk factor that

must be addressed. The traditional approach is fault-based: find out who didn't do what they were supposed to do, and you've found the cause. Every hazardous materials incident can be attributed to human error at some level, because we're dealing with systems created by people. The key is not determining whether human error was involved, but how it was involved and designing systems to take the human element into account. When I was a regulator I tried taking a multifaceted approach to risk reduction and preventing incidents by understanding why and how they occurred in the first place.

One of the challenges I faced as a regulator was understanding risk. Incident data is a favorite tool for assessing risk, but it is flawed. It is backward looking (history). It tells us little about potential adverse events. The focus is on "frequency" of incidents which we often use as a proxy for "likelihood". Addressing risk requires addressing potential consequences (as well as frequency). Anticipate what can happen beforehand and implement measures to prevent it. This is easier said than done!

**IHMM: With all the spills that occur from transporting petroleum products (highway, rail, navigable waters and pipeline), what have we learned in the past thirty years that can help us improve petroleum transportation to make spills become rare occurrences of small magnitude?**

**[Bob Richard]:** I have to say that transporting huge volumes of crude oil by rail is not the most efficient means for getting our energy products to destination. I have been dismayed that more pipeline projects have not been approved. Nevertheless rail transport of crude oil has a very good safety record. According to FRA statistics 99.997% of all hazmat shipments reach their destination safely without incident. When incidents occur they get significant attention. Don't get me wrong, I think that continuous vigilance and effort needs to be implemented to prevent these incidents. I really don't understand however all of the initiatives that the regulatory agencies are taking in response to recent incidents, for instance focusing so much attention on the classification of crude oil. I would think that greater attention and resources would be focused on track integrity and inspection since many incidents are the result of derailments. I am concerned that some initiatives such as reducing the speed of unit trains will have major impacts to our economy by restricting the flow of goods to the marketplace where they are needed as raw materials for growth.

**IHMM: How has public awareness of emergency response planning changed significantly and what else could be done?**

**[Bob Richard]:** I think this is an area that could be significantly improved. Emergency responders do not get sufficient information regarding the types and quantities of hazardous materials coming through our communities and therefore they are not able to structure their training and their equipment to be the most prepared. I personally believe we could do a better job of using scarce resources used to train and outfit responders appropriately. I believe there is significant waste involved and some communities have equipment they will never use while others are underserved.

**IHMM: To commemorate its 30<sup>th</sup> anniversary, IHMM hosted an educational symposium, "The Pillars of Change" at the August AHMP Conference in New Orleans. IHMM**

**appreciates your participation as an expert panelist to lead the interactive transportation discussion. In your opinion, what are the most important issues affecting the transportation of hazardous materials/dangerous goods today?**

**[Bob Richard]:** I think we need a more balanced and cooperative approach to developing and enforcing the regulations. There are still many areas of the world where safety oversight is deficient. Regulators need to be incentivized and pressured to work collaboratively to find and punish those shippers that put us all at risk. Take lithium batteries for instance, agencies such as the International Civil Aviation Organization are pushing for more regulation and restrictions but many of the tragic incidents have resulted from non-compliance. Who has been held accountable? Today you can find too many undeclared and non-compliant shippers that put us all at risk. More needs to be done to change the negative behaviors of those that choose not to follow safety regulations.

I am also a strong supporter of the need for government to partner with industry to achieve and implement effective risk reduction measures. It is important that entities that may be significantly affected by government policies and regulations are able to convey the implications of any decisions and offer alternative solutions which may not be immediately apparent to regulators. Appropriate consultation results in the development of more effective regulations that address the root causes of incidents with minimal unnecessary burden on vital supply chains that also impact human life and well-being. Regulations that are developed without appropriate consideration and consultation tend to be overly complex resulting in less compliance, increase in risk, reduced safety and may result in unforeseen social impacts that have negative consequences to human populations. Overly complicated regulations lead to noncompliance and increase the likelihood that unscrupulous shippers will offer undeclared and noncompliant cargo. Outreach and enforcement of existing regulations are key elements to reducing risk and the likelihood of incidents. Non-compliant and undeclared shipments of lithium batteries stemming from a lack of enforcement by some governments is very concerning. Imposing more regulation may not improve compliance of those shippers who intentionally violate current regulations. Compliant shippers are burdened with new regulations resulting in the expenditure of significant resources while non-compliant shippers continue to ignore the law. Shippers that continue to offer non-compliant shipments to air carriers need to be held accountable for their actions and penalized as appropriate as a means of changing behaviors that result in placing the public at risk. Enforcement resources should be focused on the root causes of incidents and changing the behaviors of those individuals that put us all at risk. Enforcement personnel should be allowed to use a multitude of tools and behavior changing tactics to reduce risk. I refer to the approach simply as “Find the Problems and Fix Them”

**IHMM: How would you characterize the safety record related to the transport of hazardous materials in the United States and where do you see it in the future?**

**[Bob Richard]:** It is difficult to point to a single factor but the safety record associated with the transport of hazardous materials in the United States has significantly improved. When you consider that there are 1 million shipments of hazardous materials every day in the US alone and then consider the safety record one has to conclude that the transport of hazardous materials is extremely safe. In the United States we generally average approximately 12-15 fatalities and less

than 500 serious incidents every year related to the transportation of hazardous materials. Although major disasters are rare events, less catastrophic accidents and a whole range of incidents occur more frequently. These lesser safety events may be indicators of underlying safety problems. Ignoring these underlying safety hazards could pave the way for an increase in the number of more serious accidents. Therefore it is critical that while the nation's hazmat transportation system is safe, producers, shippers, and the government continually strive to make it safer.

Accidents and incidents cost money and consume resources that could otherwise be applied to enhancing efficiency and safety. Accidents and incidents can result in injuries, fatalities, property damage, environmental damage and loss of public confidence. Loss of public confidence results in impediments to progress and economic growth. This impact is sometimes overlooked but has a dramatic impact on our society and in many cases results in a higher level of risk to the public. An understanding of the total costs of an accident is fundamental to understanding the economics of safety. The transportation industry's future viability may well be predicated on its ability to sustain the public's perceived safety while travelling. The management of safety is therefore a prerequisite for economic viability. Continued vigilance is needed to maintain and improve safety and economic vitality. When I speak before hazmat professionals and clients I typically use a slide that depicts the current safety statistics and ask: Are we safe enough? Are we satisfied with gradual progress? Can We Take Safety to Another Level? How do we drive continuous improvement? It is a never ending journey.

**IHMM: What are some current examples of cutting-edge hazmat transportation technologies that have had the most impact on hazardous materials transportation?**

**[Bob Richard]:** There is no doubt that application of emerging and current technologies has significantly contributed to the safe transportation of hazardous materials. Over the past twenty years, the entire transportation industry has experienced what some might describe as a "technological revolution." Shippers and carriers have implemented technologies to enhance their efficiency and productivity, minimize the costs of their operations, and reduce the risk associated with transporting their products. Advances in vehicle safety technologies have been a key to reducing accidents and they are getting better all the time. Just look what Volvo is piloting in Sweden with vehicles that can drive themselves. One of the most common factors resulting in hazmat fatalities is cargo tank truck rollovers. Electronic stability control and intelligent braking systems can be used to reduce the likelihood of these incidents. There are many sensors that can be used to enhance hazmat safety. If these sensors are deployed on commercial vehicles carrying Hazmat, alerts could be communicated before incidents occur or can be communicated to emergency responders more efficiently. Use of electronic shipping papers, cloud computing, mobile technologies, RFID sensors and intelligent video tracking and surveillance systems can dramatically enhance safety. In-vehicle sensors can be tied to the vehicle's system in a way that allows automatic adjustment of settings according to the vehicle's speed, steering, and road surface conditions. Use of intelligent systems in vehicles can improve vehicle and passenger safety.

My company is actively involved in an effort to promote the use of electronic shipping papers, cloud computing and mobile technologies. We are partnering with the University of Tennessee Center for Transportation Research (CTR) in collaboration with a number of leaders in the

hazardous materials transportation community to participate in and conduct demonstrations relating to electronic shipping papers. We are undertaking proof of concept demonstrations to illustrate how electronic shipping papers can be used to enhance safety, law enforcement, information exchange, efficiency and respond to incidents through the use of a variety of technologies including electronic shipping papers, tracking software and communication hardware. The pilot tests will demonstrate how software, cloud computing and communications hardware can be used to:

- Improve the availability and accuracy of the quantities and types of hazardous materials and response information for shipments and packages;
- Improve the accuracy and speed by which information is available to emergency responders when accidents occur;
- Improve the availability of information needed by enforcement personnel;
- Communicate up-to-date information about packages currently in transit;
- Reduce the impact of delayed response including more effective remediation resulting in less harm to people, property including vital infrastructure and the environment; and
- Reduce impacts to commerce and society (e.g. minimize traffic congestion that results in road closures).

**IHMM: IHMM launched the Certified Dangerous Goods Professional (CDGP) credential in February 2014 with the international scope after working in partnership with the Dangerous Goods Trainers Association (DGTA). What can be done to foster these credentials and increase the recognition of the CDGP credential?**

**[Bob Richard]:** I think IHMM and the Dangerous Goods Trainers Association are doing a great job promoting the benefits of the credential. I support continued efforts to spread the word and articulate the value of the credential and have personally promoted it whenever possible.

**IHMM: What “value” does the CDGP credential hold for you? How would you convey the importance of this credential to your colleagues?**

**[Bob Richard]:** I am proud to have fulfilled the requirements and to be able to call myself a Certified Dangerous Goods Professional. I believe that the credential adds to my ability to demonstrate my credibility and knowledge in the field of hazardous materials transportation. Professional certification of dangerous goods professionals is one method to help ensure that dangerous goods professionals are equipped with the appropriate skills needed to perform their critical functions (e.g. from classification of materials, to packaging, handling, moving, and unloading of hazardous materials shipments in commerce).

**IHMM: Can you share a few best practices in the transportation of hazardous materials/dangerous goods by road, railroad, sea or air?**

**[Bob Richard]:** The challenge to product distributors is daunting because many do not have properly trained personnel to maintain compliance with complex and frequently changing transportation regulations. Unfortunately, not only is it a violation to ship a product misclassified as a hazardous material, but it is also costly and a waste of human and capital resources. Reverse

logistics operations, including recalls and return of damaged products, pose significant challenges as well, and many companies are not aware of the exposure and risks posed by such operations. In addition to safety and compliance issues, there are product delivery efficiencies and challenges such as customer returns and reverse logistics that must be addressed. Mitigating risk is just one part of the equation. If a company is not optimizing the many exceptions authorized in regulations, they may be paying too much to ship their products. Reaping the advantages of regulatory exceptions and developing the appropriate shipping strategies can enhance a company's profits while improving customer satisfaction and efficiency.

Managing hazardous materials shipments in the supply chain can be challenging. Often distributors have thousands of products that are shipped to customers worldwide. A company's product inventory may change daily with new products being introduced in significant volumes. Customers want products quickly and in many cases they must be shipped aboard aircraft, which presents its own challenges because the air transport requirements are conservative and companies that ship undeclared hazardous materials shipments by air are subject to significant fines. Often these companies do not have the expertise to identify which products are hazardous materials. This is particularly true for small businesses.

One of the most effective things that a company that ships hazmat can do is to implement a hazmat data strategy that clearly defines the process and responsibility for classifying and storing dangerous goods data. Too often I find that companies are resorting to archaic practices of looking up the regulations each time they ship a product. Companies can enhance the shipping process by always having the right information when a shipment needs to go out. There are a number of tools available that can be utilized to ensure that shipments get to their destination without impediments, including:

- Electronic versions of the regulations that allow easy navigation within and between regulations.
- Automated validation software that checks shipping paper content against the regulations to flag compliance issues before a shipment is completed.
- Classification wizards that allow for easy classification of hazmat products by guiding users through a series of basic questions.
- Smart labels that use bar codes linked to software to confirm that the labels on the package match those that are required, based on shipping documents.

I also find that too often companies that receive and reship hazmat overly rely on the fact that their suppliers are shipping products to them compliantly. They rely on the fact that shipments are properly marked, labelled, documented and classified. Based on my experience working with clients I find that relying solely on suppliers can lead to problems. I advise clients to train employees to recognize noncompliant inbound shipments, establish processes for correcting deficiencies, and to hold their suppliers accountable. Development of customized training that is tailored to employee responsibilities and the products a company ships can be incorporated into e-learning platforms to train employees more efficiently.

More and more companies are seeking professional advice to ensure they are enhancing their opportunities while minimizing risk. Dangerous goods professionals can identify common compliance gaps and safety problems during workplace assessments before the inspector

uncovers them. In my company we have a number of CDGPs and hazmat professionals that have years of experience addressing the safe and compliant transportation of hazardous materials. Any company involved with supply chain logistics must contend with a multitude of hazardous materials shipping regulations, both domestically and internationally. Staying in compliance requires significant time and effort, and companies without internal resources should consider outside help to assess their hazardous material shipping vulnerabilities. Working with dangerous goods professionals can keep companies ahead of the dynamic and frequent changes to hazardous materials regulations. Utilizing hazardous materials software solutions and a team of experts with unparalleled regulatory expertise and experience to assess logistical risks associated with the handling, storage and transportation of hazardous materials makes good business {dollars and cents}. The costs paid to a professional will be more than offset by the avoidance of penalties and risk to a company's public image. Furthermore, professional hazardous materials experts can identify ways to reduce transportation costs by utilizing exceptions afforded in the regulations.

**IHMM: What sort of opportunity would this profession offer returning veterans?**

**[Bob Richard]:** Working as a hazardous materials professional poses an excellent opportunity for returning veterans especially if they have experience with handling storage or transportation of hazardous materials while enlisted. It is an interesting, rewarding and challenging career track that affords opportunities for career growth and advancement.

Since leaving the government for private practice Bob draws on his vast experience to provide guidance and consulting services to clients ranging from major international corporations to small businesses. He has assisted numerous clients with bringing their operations into compliance. Bob has conducted compliance audits, assisted clients with classifying their hazardous materials, interpreted regulatory requirements, developed training programs and operations manuals and assisted clients with navigating the complexities of the domestic and international transport regulations.

Bob is a member of several hazardous materials trade associations and serves as a board member of the Dangerous Goods Advisory Council. Bob has written numerous articles on the transport of hazardous materials that have been published in trade journals and newsletters worldwide.

*If you are interested in being interviewed for the IHMM Today Spotlight, please contact M. Patricia Buley, Senior Manager, Credentials at [pbuley@ihmm.org](mailto:pbuley@ihmm.org).*