

# UN/SCETDG/36/INF.35

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## COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

Sub-Committee of Experts on the  
Transport of Dangerous Goods

Thirty-sixth session  
Geneva, 30 November - 9 December 2009  
Item 11 of the provisional agenda

### OTHER BUSINESS

Developing and maintaining experts on the regulations applicable to safe, secure,  
and efficient transport of dangerous goods

Transmitted by the Council on Safe Transportation of Hazardous Articles (COSTHA)

#### Introduction

1. At the Thirty-Second Session of the Sub-Committee conducted December 2007, COSTHA introduced a project identifying the reasons for the decline in experts on the side of government and industry. COSTHA noted the paper introduced by the expert from the Netherlands ST/SG/AC.10/C.3/2006/38 OPTIONS TO FACILITATE REGULATIONS WITH THE UN MODEL REGULATIONS paragraph 2(b), entitled “**Improved efficiency and keeping expertise**” which stated that “it is getting more and more difficult to find new persons who are interested in spending many years in becoming an expert ...”

#### Background

2. The goal of the COSTHA project is to identify the reasons for the decline in experts and to develop measures to attract qualified candidates to embark on climbing the career ladder to becoming an expert in this field. One of the key elements identified in the COSTHA project, entitled, Enhancing the Image of the Dangerous Goods/Hazardous Materials Professional, Blueprint for Success, is to create an awareness and greater appreciation for the critical importance of the tasks performed by individuals employed as dangerous goods transportation professionals. Unfortunately, the more success these professionals achieve, the less importance may be perceived for the work they do to avoid those incidents that never occur.

*“The better we perform, the unnecessary we appear.”*

3. The Strategic Plan behind the COSTHA project, Blueprint for Success, contains the following four major elements:

- Advance Public Relations Strategy

- Add Human Resources Component
  - Further Awards programs within government, industry and other associations
  - Continue to develop the educational component
4. The work has moved ahead steadily with the following successes:
- Signed an official agreement with the US Department of Transportation which identifies the problem and the challenges and commits us to work together to develop solutions.
  - The program has been introduced and well received at the UN Sub Committee of Experts on the Transport of Dangerous Goods
  - Several government delegates have indicated support of the program
  - The expert from the UK has engaged the European Union and this initiative has been added to the Commission's Logistic Action Plan
5. At the December 2008 meeting the EU members –
- Highlighted the role of the management in encouraging expertise, noting that the problem is even more accentuated in small and medium sized companies;
  - Recalled the good track record of the sector: as only a few incidents have occurred, there appears no urgency to allocate more resources in the sector. Thus transport of dangerous goods is a victim of its own success.
  - Noted the continuous outsourcing of activities may be contributing to the problem
  - Returned to the basic question of salary and career prospects.
  - The chairman concluded that the problem is complex, having no single solution.
  - We are working with the Institute of Hazardous Materials Managers (IHMM) to encourage them to expand their focus on transport. In December of this year we are assisting the Institute with an industry survey.
  - We have published a website, presented at meetings around the world to include Durban South Africa, Sydney Australia and Montreal Canada.
  - Published the "Blueprint for Success" brochure to educate the industry about the program.
6. Earlier this year, COSTHA engaged the services of a human resources consultant, Barbara McIntosh, PhD, SPHR, School of Business Administration, University of Vermont. COSTHA also conducted a pilot survey to lead the most critical component of the project. The fundamental portion of the human resources projects is to benchmark positions in terms of salary, title, responsibilities and placement within the organization. The goal from the original strategic plan was to provide sample job descriptions and titles for industry professionals to draw from. These job descriptions and titles would assist the dangerous goods professional in communicating their role and responsibilities with the hope that this will positively impact their recognition within the company. Dr. McIntosh quickly added another opportunity to the project by identifying the Society for Human Resource Management (SHRM), with over 250,000 members in over 140 countries, as a way to communicate the value of the knowledge skills and

abilities necessary to perform the vital function of controlling dangerous goods transport risk and ensuring safety.

7. Highlights from the pilot survey confirm many of our original thoughts about the importance of clearly identifying the role of the dangerous goods compliance manager to management, certification programs are important, recognition and awards programs are encouraged.

- The majority of respondents worked in manufacturing
- The regulated materials involved covered the full spectrum
- For the majority, hazardous goods constituted less than 10% of all goods transported.
- Materials were shipped domestically as well internationally
- Ground transport was the primary mode (91%) followed closely by air (83%) and water (70%)
- Average tenure was 10.25 years
- Educational background is divided among those with college/university degrees and those without.
- 33% of the respondents report having masters degrees
- 27% report having industry credentials (DGSA and CHMM)

8. The majority of the respondents to the pilot survey reported making over \$90,000 US. However, this compensation needs to be analyzed compared to other comparable positions within the individual organizations. Anecdotally we also believe that this amount will be lower than comparable positions in the public sector.

9. Dr. McIntosh's paper on the pilot survey is attached (Appendix A). Within the next few weeks COSTHA will distribute the actual survey to thousands of industry professionals.

10. We look forward to returning to the UN Sub Committee of Experts on the Transport of Dangerous Goods to report on the findings from this important survey and the other areas of work within the Enhancing the Image of the Dangerous Goods/Hazardous Materials Professional.

## **Appendix A:**

### **Protectors in the Shadows:**

#### **The Unrecognized/Undervalued Hazardous Materials/Dangerous Goods Professional**

Barbara McIntosh, PhD, SPHR

School of Business Administration, University of Vermont

### **ISSUE STATEMENT**

Evolving occupations typically include increasing KSAs (knowledge, skills and abilities) but little, if any, formal recognition of this change. Positions tend to remain classified where they originated rather than being redefined and/or moved to a commonly recognized area of responsibility within an organization structure.

Formal recognition of an evolving occupation includes multiple changes:

- recording** responsibilities formally in job descriptions,
- credentialing** in new areas of expertise,
- progression** in an organization's structure and one's occupation,
- recognition** of increased contribution in the form of appropriate salary increases,
- retention** of tacit knowledge required for successful job performance by future incumbents

The role of the hazmat transportation manager is a classic example of an evolving occupation. As our knowledge about dangerous substances and their impact to the environment, as well as humans, increases, there are additional precautions that are required in transportation activities. Responsibility grows with the consequences of inaction or a mistake and expanding global responsibilities.

It should also be noted that these activities are distinct from environmental, safety engineering activities that are regulated under the Environmental Protection Agency in the United States. This distinction clearly involves some overlap and adds to external confusion about roles and responsibilities.

### **Job Title/Job Description**

A search of O\*NET, the US Department of Labor website that lists all job titles and associated job descriptions, lists 217 job titles fitting "hazmat manager". A search for "hazmat transportation manager" actually increases the number listed to 229 positions. These job titles range from: Compliance Manager and Regulatory Specialist to Logistics Manager. Depending upon the organization there can be either a legal/regulatory orientation or an operations management perspective.

## **Developing/Revising Job Descriptions**

Job descriptions and specifications flow from job analysis within a single organization. The techniques used to develop job descriptions will vary by organization but typically include one of the following:

### ***Job Analysis Techniques:***

*Task Inventory Analysis (Tasks are rated according to importance , time spent, etc. Method identifies the necessary knowledge, skills and abilities, KSAs, to do the job)*

*Critical Incident (Behavioral incidents representing poor through excellent on each dimension of the job)*

*Position Analysis Questionnaire (PAQ)(Rating of 194 job elements – six scales including information input, mental processes, work output, relations with other persons, job context and other characteristics.)*

*Functional Job Analysis (FJA) ( Rating of how the incumbent relates to people, data and things)*

*Methods Analyses (Motion Study) (Time per unit of work)*

*Management position Description Questionnaire (MPDQ) (Descriptive checklist of 197 items – responsibilities of the job)*

*Hay Plan (Impact of the job on the organization re: objectives, dimension, nature and scope and accountability)*

Job descriptions and job specification are outcomes from the job analysis process. A job description is actually a summary statement of the information collected in the job analysis process. The components include a job's tasks, duties, and responsibilities. In the case of the hazmat transportation manager, it is advisable to detail job elements in general terms since the positions are located in several different functional areas including legal/regulatory, compliance, logistics, etc. The duties and responsibilities also may be conceptualized differently depending on the industry, the complexity of the processes, and the sheer volume of activity. From the pilot study (discussed below), it is clear that the hazmat transportation responsibilities comprise varying proportions of an individual's specific job duties ranging from under 10% to 100% of the incumbent's responsibilities.

## **Suggested Form and Key Words**

### **Job Summary**

The position is a senior level position for experienced practitioners fully qualified in all aspects of domestic and/or global hazardous materials transportation administration. Responsibilities in this position include: conducting regulatory monitoring and compliance reviews, providing guidance relative to the diverse elements of the hazardous materials transportation, overseeing or coordinating information/safety regulations, reviews, and analysis; coordinating policies and procedures; developing guidelines and commenting on proposed rulemakings, providing regulatory input for maintenance of company hazmat database; assisting buyers, suppliers and logistics operations in providing safe transport of products which minimizing injuries and regulatory fines, and administering internal hazardous materials training program.

### **Job Duties and Responsibilities**

Responsibilities in this position include:

- **Proactive compliance** with state and federal outreach related to DOT Hazardous Material regulations.
- Monitor regulatory and compliance reviews
- Project Management - manage multi-divisional groups on identify gaps and developing solution to assist field locations in making it easier to comply with regulations. Lead special projects teams such as the development of the solutions for DOT hazmat compliance related to Logistics
- Logistics Resource and Support - Directs facility in the proper storage and shipment of hazardous materials. Answers questions and addresses issues from management, regulators, and customers.
- Provide regulatory input for maintenance of the organization's hazmat database
- Research OSHA/CFR, HAZMAT, Dangerous Goods and Occupational Safety Standards
- Recommend policies and procedures that affect the organization and its affiliates.
- Have extensive contact both within and outside the corporation. Contacts includes interface with local, state, federal and foreign agencies related to the transportation of hazardous materials; freight forwarders, 3rd party providers and carriers.
- Provide solutions to problems, which may be complex in nature and related to the regulatory requirements.
- Frequently handle information that is highly confidential in nature.
- **Emergency Resource** - On call 24 hours a day to answer DOT questions in the event of an emergency situation.
- Function as the **company subject matter expert** relating to hazardous material shipping functions and training.
- Administer hazardous materials training program.
- Research and update training information

### **Minimum Qualifications**

- Associates degree or higher in science, engineering, business, bio-safety or a related field
- DG, Hazmat experience
- Working knowledge of HAZMAT or Dangerous Goods (IMO:IMDG Code) and or ICAO regulations
- Minimum of 5 years experience in DG compliance
- Current training (certified as meeting DG Transport requirements per 49 CFR 172.704, 1.3 UN Model Regulations, Chapter 4 ICAO, Chapter 1.3 IMDG Code )

- Ability to interpret and apply transport regulations to facilities and operations
- Ability to coordinate projects with multiple divisions

### **Recommendations – Job Titles and Job Descriptions**

Seek agreement on job dimensions. Identify commonalities and offer a template of job dimensions that can be used by all incumbents so there is more uniformity across the industry.

Have professionals partially engaged in hazmat transportation management include key language in their job descriptions as identified above

Identify an appropriate position title and work with O-Net to have this listed as a new and emerging occupational title for those engaged exclusively in this a task.

### **Credentialing**

This activity serves multiple purposes.

1. It formalizes the knowledge that is required to perform the job successfully
2. It provides a mechanism to recognize those who have achieved a certain level of expertise
3. It provides the organization a formal mechanism to reward achievement
4. It offers a way to track industry clusters of expertise
5. Over time, multiple levels of achievement can be built into the credentialing system.

### ***Recommendations re: credentialing:***

Work with related organizations to formalize a set of credentials based on testing/continuing education.

### **Progression/Career Steps**

Identification of careers ladders within a profession is important for the individual seeking additional challenges and providing evidence of continuing development to upper level management. It is also important for organizations establishing positions and /or looking for replacements.

### ***Recommendations for progression/career steps:***

Develop benchmarks for career progression. (Identify minimum competencies for entry level managers as well as expectations at the most senior level of leadership in the profession.)

Work with member organizations and related associations to create and offer professional development opportunities including webinars, short courses, recommended degree programs, etc.

Offer “credential credits” (continuing education) at professional association meetings.

Require completion of continuing education “credits” for career progression

### **Recognition/Rewards**

Recognition can be managed by external associations such as COSTHA and model organizations/individuals should be recognized annually.

Rewards within the organization are more complex because of unique salary schedules. External recognition, however, provides “evidence” that merit pay, a bonus, etc. is appropriate for the individual.

Individuals can also use industry wide salary surveys and the one to be conducted by COSTHA to argue for repositioning the position within the organization and/or increasing the compensation level.

### **Knowledge Retention**

Preventing is the loss of organization level knowledge/expertise in the area of hazmat transportation is critical. Individual organizational product or service nuances cannot be left to trial and error by future hires. With the potential retirement of a large number of Baby Boomers in the next 10-20 years, associations and regulators must take a more active role in preventing a “brain drain” and building knowledge transfer into their missions.

### **Recommendations for knowledge retention**

Develop mentoring /support programs through the professional associations (This will help with career guidance and training as well as knowledge transfer)

Encourage mentoring programs at the organization level

Support the development of on-line materials by members to cover the unique circumstances in their industry

Encourage individual members to record job knowledge before an organizational exit.

Develop a culture of supporting the profession!

## **SURVEY - - - COSTHA MEMBERSHIP/PILOT SURVEY**

### **Methodology:**

The pilot survey was sent via e-mail April 30,2009 to 325 COSTHA members. There were 74 responses for a 22.7% response rate. Univariate descriptive statistics were generated using Survey Methods and Excel.

### **Descriptive Analysis:**

The majority of the respondents (51%) worked in manufacturing, and 22% worked for service providers such as training, packaging, etc.

The regulated materials that they were involved in shipping covered the full spectrum: flammable liquids (88%), corrosives (83%), gases (72%), ORM-D Consumer commodities (72%), flammable solids (69%), poisons (64%), oxidizer, organic peroxides (61%), explosives (41%), and radioactive materials (38%). Eighty-eight percent (88%) indicated they transported other miscellaneous substances but these were not specifically identified.

For the majority (52%), hazardous goods constituted less than 10 % of all the goods they transported. For 21% of the pilot respondents, however, hazardous goods represented 51% of their shipped/transported materials. These materials were shipped both domestically (98%), as well as, internationally (88%). Ground (road and/or rail) was the primary mode of transportation (91%), but this was followed closely by air (83%) and then water (70%)

The educational background of the professionals managing hazardous materials transportation is split, some have 4 year degrees, others don't. Thirty-three percent ( 33 %) of the respondents to the pilot survey did report having masters degrees. The respondents also had other credential including CHMM (15%) and DGSA (12%) among others.

Respondents' average tenure in their organization was 10.25 years, but they had been involved in compliance work for an average of 10.7 years which means that there is some career mobility within the profession.

As expected, the respondent's positions were scattered throughout the organization. The primary locations were in Logistics (19%) followed by Regulatory Affairs (16%), EHS (15%), and Transportation (14%). The respondents also had varying job titles which related primarily to their home department. Regardless of the location of their position, the survey results were clear that these individuals were managing largely the same issues with respect to hazardous materials or dangerous goods legal /regulatory/compliance issues and compliance training. To a somewhat lesser extent they also managed safety, security, and environmental health and safety issues.

The salary variation reported in the survey reflected the wide variation in the size of the organization, the number of individuals supervised, and the complexity of the complexity of the dangerous goods compliance for that specific organization. The majority (55%) of the respondents to the pilot survey reported making over \$90,000. Ultimately, this compensation needs to be analyzed compared to other comparable positions within the organization.

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