



March 9, 2010

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Dear Dr. El-Sibaie:

The Council on Safe Transportation of Hazardous Articles, Inc. (COSTHA) hereby submits comments to the Notice of Proposed Rulemaking (NPRM) published in Docket No. PHMSA-2009-0095 (HM-224F) on January 11, 2010.

COSTHA is a not-for-profit organization representing manufacturers, shippers, distributors, carriers, freight forwarders, trainers, packaging manufacturers and others associated with the hazardous materials transportation industry. In addition to promoting regulatory compliance and safety in hazardous materials transportation, COSTHA assists its members and the public in evaluating the practicality and efficacy of laws, rules and regulations for the safe transportation and distribution of hazardous materials.

COSTHA membership includes industries that are affected by nearly every aspect of this rule, from manufacturers of lithium batteries, to shippers of batteries, consumer electronics, aircraft, automobile and supporting parts manufacturers, as well as air, road, and vessel operators. Our comments are divided into ten (10) areas:

- New Shipping Names
- Watt Hours Verses Equivalent Lithium Content
- Design Type Testing
- Elimination of Exceptions for Small Lithium Batteries
- Packaging and Stowage
- Return of Defective Batteries Internationally
- Consolidations of Lithium Battery Regulations
- Ongoing Safety Initiatives
- Cost-Benefit Analysis
- and Compliance Date.

**The Council on Safe Transportation of Hazardous Articles, Inc.**

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### **New Shipping Names**

PHMSA proposes to adopt new shipping names in order to harmonize with current international standards. COSTHA fully supports inclusion of the proper shipping names “lithium ion batteries” and “lithium metal batteries”. However, PHMSA also proposes to supplement these proper shipping names with the clarifying words “including lithium polymer batteries” and “lithium alloy batteries” respectively. We support inclusion of these clarifying descriptors within the Hazardous Materials Table in §172.101 as long as these items are included in italics, serving as supplemental information but not part of the formal proper shipping name. The NPRM does not make this intent clear as the proposed text for §172.101 indicates the additional wording would be underlined. Any deviation from this prescribed format disrupts the transportation system and impedes communication and thus safety. We question whether this was PHMSA’s intent or was merely an error in the printed text of the Federal Register.

### **Watt Hours Verses Equivalent Lithium Content**

PHMSA’s proposed adoption of Watt hours (Wh) in place of equivalent lithium content (ELC) would harmonize 49 CFR with current international standards. COSTHA strongly supports international harmonization. We believe this proposal will improve understanding, prevent frustrated shipments, and correctly indicate the nominal energy possessed by a lithium ion battery. A battery’s ELC may be inappropriately calculated depending on whether the component cells are connected in parallel or in series. Nominal energy is referenced in the UN Manual of Tests and Criteria as well as other international standards. We feel this is a needed improvement to 49 CFR.

### **Design Type Testing**

Lithium battery technology has continued to progress in recent years and the current classification criteria for lithium batteries has become antiquated and perhaps obsolete. COSTHA supports the efforts of PHMSA and the international community through the UN Working Group on Lithium Batteries and the revisions to Section 38.3 of the UN Manual of Tests and Criteria which has resulted from those efforts. Additional revisions are still being discussed, and COSTHA understands final revisions will be presented to the UN Subcommittee of Experts on the Transport of Dangerous Goods during this biennium.

The US Government as represented by PHMSA has been an active participant in the UN Battery Working Group. However, the proposals presented in the NPRM seem contradictory to discussions and decisions which have occurred at the Working Group level. PHMSA proposes to reduce the amount of change to the mass of the anode, cathode, or electrolyte material that would trigger retesting from 20% to 5%. COSTHA questions the scientific basis for the 5% proposal. During UN Working Group meetings in 2009, the Chinese delegation proposed reducing the percentage to 10%. Their proposal was met with concern by participants, and the Competent Authorities participating chose to reject the proposal. Some COSTHA members have pointed out the specification tolerances of many component cells are near the 5% range. Thus any changes to the component cells would require retesting of the battery. One COSTHA member received estimates of \$65,000 for conducting the vibration test (UN Manual of Tests and Criteria, SubSection 38.3, Test 3) for a single large format battery. Unnecessary testing would be burdensome and could result in loss of competitive position and jobs in the United States.

PHMSA also proposes to add examples of situations that would necessitate retesting of the battery. Although adopted by the UN Working Group, COSTHA questions the need for clarification for these situations, particularly within 49 CFR. PHMSA already provides reference to the testing criteria in Section 38.3 of the UN Manual of Tests and Criteria. We believe inclusion of the examples may further confuse the reader resulting in compromised safety and compliance.

### **Elimination of Exceptions for Small Lithium Batteries**

COSTHA is greatly concerned the elimination of exceptions for small lithium batteries by air will create significant confusion by creating a dual system for shipping lithium batteries domestically versus internationally. Our membership has long supported harmonization of domestic and international standards. The vast majority of today's businesses, even small businesses, are dependent upon the global supply chain. When two divergent regulatory systems are in place, the result is chaos in the international shipping community. Ultimately, not just non-compliant shipments but unsafe shipments will be introduced simply because the unique regulatory standards applicable to shipments moving internationally in import or export commerce through the US are too complex.

PHMSA also proposes to introduce a minimum standard (0.3 g - lithium metal, 3.7 Wh – lithium ion), below which batteries packed with or contained in equipment are not subject to any other requirements under the HMR. This requirement is inconsistent and less restrictive than the current ICAO standards which include no such lower limit. COSTHA is at a loss as to why PHMSA would propose such an exemption while arguing for increased regulation. A review of the FAA's battery incident list suggests several events involved batteries that would be exempt under this proposal.

We strongly believe the continuing discussions at ICAO are addressing the possible gaps in the regulation of lithium batteries, and recommend PHMSA harmonize with the ICAO standards, as proposed for the 2011-2012 ICAO TI.

COSTHA also notes elimination of the exception for small batteries will have a significant impact on the shipment of small batteries by other modes. The proposed new marking, "LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD AIRCRAFT", will be required on ALL battery shipments which currently meet IMDG SP 188 but are above the 0.3 g – lithium metal or 3.7 Wh – lithium ion limitations according to §171.25(b). Because this statement is only applicable to shipments to, from, or within the US or aboard US flagship vessels, companies will have to modify their package markings when shipping to the US, or follow the more restrictive marking for all shipments. Once again, this sets up a confusing situation that may lead to non-compliant shipments.

### **Packaging and Stowage**

#### **Packaging**

As with previous comments, our membership has identified differences in packaging requirements under the NPRM and existing international standards. For example, a lithium ion battery packed with equipment is not required to be contained within UN specification packaging (§173.185(b)). However, PG II packaging is required per ICAO TI PI 967, Section I. Further, PHMSA proposes to retain the requirement for waterproof packaging in §173.185(c)(1) even though that requirement has been removed for the 2011-2012 ICAO TI for PI 967 and PI 970. These differences confuse the shipper negatively impacting safety.

To illustrate the difficulties, below are 2 possible scenarios:

Scenario 1: A package of equipment with 2 lithium ion batteries at 8Wh, shipped from India to England, and then to the U.S. According to ICAO, the shipment from India to England would not be shipped as Class 9, nor would it have markings or labels as the 2 batteries are under 100Wh. The only required statement would be that it contains lithium ion batteries that are not regulated. Prior to export to the US from England, it would have to be identified, reclassified as a Class 9 substance, labeled, documented, and marked manually, prior to entering the US by air. In addition, it would have to be packed as Packing Group II in England, as England and the EU adhere to the ICAO. Were it inspected in

England, questions would rise as to why the shipper classified it as Class 9, causing additional confusion, delays, and possibly fines for misclassification.

Scenario 2: That same package is returned from the U.S. to England, and then back to India. In the U.S. it would have to be classified as Class 9 using PG II Packaging. Once reaching England, the options would be to continue the shipment as a Class 9, or to remove the class 9 markings, repack in strong outer packaging to continue per ICAO, or continue as Class 9. Requiring the use of PGII packaging adds cost to the US Shipper inbound and outbound and puts foreign shippers at a cost advantage in commerce.

### **Stowage**

In the NPRM, PHMSA proposes to limit the quantity of lithium batteries which may be stowed in an inaccessible cargo compartment. This concept is first discussed in the Preamble under Alternative 4. Specifically, PHMSA states "...we would limit the manner in which lithium batteries may be stowed on cargo aircraft." The draft language proposed by PHMSA is a modification to the last sentence in 175.75(c) and 175.75(e)(1) although the in the Cost Benefit Analysis, an even larger limitation is suggested (C/B, Page 5).

COSTHA would like to note this limitation is not limited to cargo aircraft only but to passenger carriage as well. Paragraph 175.75(c) is applicable to passenger aircraft while Paragraph 175.75 (e)(1) is applicable to cargo aircraft. PHMSA does not make this limitation clear in the NPRM discussion.

US air carriers are responsible for abiding by the loading limitations specified in §175.75 49 CFR, however today these limitations are not extended to Class 9 or ORM-D materials for passenger aircraft or cargo aircraft, nor are they extended to Class 3, PG III, Class 6, or Class 7 materials in certain circumstances. Carriers train their employees to load aircraft based on these limitations. Acceptance procedures and software support tools have been written to follow these guidelines. In all cases, these programs are based on the hazard class of the material (Class 9, ORM-D, Class 3, PGIII, Class 6, Class 7), not UN Number or proper shipping name. These programs are not equipped to separate by UN number. To implement, carrier training programs would require revision. Acceptance procedures, checklists, and manuals would need to be revised. Automated or electronic aircraft loading software will need to be reprogrammed to account for a Class 9 material that must be limited to 25 kg per inaccessible compartment or Class C cargo compartment. Because these actions would pose a significant change to a carrier's program, each of their training programs, manuals, and systems would need to be reviewed and approved by the FAA Regional ASH Office. If PHMSA adopts these limitations as written and mandates the implementation within 75 days of publication of the Final Rule, COSTHA questions the ability for all US carriers and FAA Regional ASH Offices to revise, review, and approve carrier manuals, training programs, and systems within that timeframe.

Restricting the shipment of lithium batteries to accessible cargo areas could significantly limit the air transport of large prototypes batteries that are being developed in the automotive industry as they possibly would not fit in accessible cargo areas. Further, the alternative FAA approved fire resistant containers are not currently available or clearly defined, and may not be produced in sufficient quantity if the rule takes affect within 75 days of its promulgation.

### **Return of Defective Batteries Internationally**

Proposed 49 CFR § 173.185(g) would require lithium cells or batteries that have been damaged, identified as defective, or that are otherwise returned to the manufacturer for safety reasons to be transported only by road or rail. Due to the global supply chain, it is not reasonable to assume each company has facilities in the United States to properly diagnose defects or repair damaged batteries.

Compliance with this requirement by international shippers outside of North America would be impossible as many international destinations are not reachable by road or rail transport. Companies must be able to ship any defective or damaged batteries to or from foreign locations in order to promptly diagnose defects or repair damaged batteries. COSTHA recommends PHMSA consider permitting the shipment of such batteries by vessel or air in conditions similar to those currently required for low production runs of batteries that have not been tested in accordance with the UN Manual of Tests and Criteria. Such batteries are today permitted to be transported, according to Special Provision 29, in outer packaging that is a metal, plastic, or plywood drum or metal, plastic, or wooden box that meets the criteria for Packing Group I packagings.

### **Consolidations of Lithium Battery Regulations**

COSTHA supports PHMSA's proposal to consolidate the lithium battery regulations. Currently, exceptions and limitations are scattered throughout numerous special provisions to the Hazardous Materials Table while the packaging requirements are found in §173.185. By placing all these requirements in one section of the HMR, a reader can focus their attention on the designated section to determine if the exception or limitation applies to their shipment.

### **Ongoing Safety Initiatives**

COSTHA applauds the efforts made by PHMSA with their SAFETRAVEL.DOT.GOV website and other methods to inform the traveling and shipping public of lithium battery transport regulations. Many COSTHA members have supported these efforts through internal memorandums, modifications to public contact websites, and increased training. However, despite these combined efforts, PHMSA continues to document reports of improperly packaged or classified (tested) battery shipments. COSTHA is aware of an informal document created by the FAA which summarizes battery related air incidents during the past 19 years. Based on a review of the information contained in this document, we would like to emphasize several items.

The list includes 109 total incidents. Of these incidents, 42 are specifically attributable to lithium metal or lithium ion batteries. Based on the incident summary, the incidents can be divided into 4 categories:

- Passenger baggage related – 17
- Non-compliant shipments – 11
- Mishandled shipments – 2
- Cargo shipments – 12

The summaries of the 12 cargo shipments do not contain enough information for the reader to determine whether the shipment was compliant with existing packaging requirements. In reviewing the remaining 30 incidents, 17 were related to the transport of lithium metal or lithium ion batteries in passenger baggage. Many of these incidents relate specifically to misuse or improper handling of the batteries or devices containing the batteries by the passenger. There are 11 incidents that are clearly identified as shipments that were not in compliance with existing transport regulations. The batteries were not properly packaged. Batteries were not protected against short circuit. Batteries were not properly tested to the UN 38.3 classification criteria. Two of the incidents are attributed to improper handling by either air carrier agents or government officials (Customs Agents).

COSTHA argues that of the 42 reported lithium battery incidents which have been recorded and investigated by the FAA during the past 19 years, at least 30 of those incidents occurred because existing regulations were not properly followed. Many of the remaining 12 incidents may also fall within noncompliant shipments depending on specific investigation data. COSTHA encourages the FAA to

release more information on these incidents to facilitate conducting a more thorough “root cause” analysis.

PHMSA notes in the Preamble to HM-224F the elimination of exceptions for small batteries the following statement:

*“Under the HMR, materials that pose a specific and serious air transportation risk are regulated more stringently than materials that pose less of a risk when transported by air. Lithium batteries are a current exception to this standard. The need to fully regulate these items and to aggressively enforce all applicable regulatory requirements is critical to air safety. Once lithium batteries are fully regulated, enforcement agencies will be able to take appropriate action against non-compliant shipments, reducing the number of non-compliant packages and therefore, reducing the number of lithium battery incidents.”*

COSTHA disagrees with several statements and conclusions drawn by PHMSA. First, lithium batteries are not an “exception to the standard”. Existing lithium battery regulations by air are more stringent than for other modes. Special Provision A54 limits the amount of lithium batteries that may be contained within a single package. This limitation is not found in other modes. Special Provision A55 limits the ability for prototype batteries to be transported under an approval. Such an approval is not required for road shipments. Special Provision A101 specifically limits the transport of primary lithium batteries aboard passenger aircraft to small quantities of batteries packed with or contained in equipment. Special Provisions A103 and A104 limit the quantities of lithium ion batteries that may be packed or contained in equipment on passenger aircraft. None of these restrictions exist for the other modes.

Second, PHMSA suggests that only after batteries are fully regulated, enforcement agencies may take appropriate actions. COSTHA believes enforcement agencies currently have the ability to take enforcement actions against offerors of non-compliant shipments, even in the case of excepted batteries. If a battery is offered as an excepted battery under SP188 but has not successfully been tested in accordance with SP188 (a)(1), enforcement agencies have the ability to take action against the shipper for offering a non-compliant shipment. COSTHA would like PHMSA to explain why a battery must be fully regulated before enforcement action is available.

Thirdly, PHMSA concludes that enforcement action will result in a reduced number of non-compliant shipments and a reduced number of battery incidents. COSTHA would like to review any data that was used to support this conclusion. It is our opinion that ignorance of the regulations is a significant contributing factor to the number of non-compliant shipments. Lithium batteries have made their way into every facet of our daily lives. They are contained in watches, cell phones, electric thermometers, computers, cameras, glucose monitors, oxygen concentrators, vehicles, MP3 players, and gaming systems. At any given time, a single individual may have 6 or more of such batteries on their person (watch -1, cell phone -1, MP3 or iPod -1, laptop -2, medical monitor -1). Many businesses are not aware of the recent (last 3 years) changes to lithium battery transport regulations. COSTHA has seen a significant uptick in questions and requests for additional information and training. COSTHA is doing its best to inform our members and provide education. These efforts include webinars, training classes, and informational bulletins relaying the latest changes and requirements. Such efforts are reinforced when enforcement agencies take actions against shippers of non-compliant batteries and packages. While the FAA does not publish penalty actions on their website, COSTHA is not aware of any significant enforcement actions taken against the individuals responsible for the 22 lithium battery incidents by air in the last 4 years, including clearly non-compliant shipments.

Enforcement is certainly part of the transportation regulations. However, if violations of existing regulations are not met with enforcement actions, what is PHMSA's justification that future violations will? COSTHA agrees with PHMSA and the FAA's assumption that confusion occurs because of a lack of proper training (Cost-Benefit Analysis, pg. 16). But PHMSA makes the assumption that increased regulation will correct poor training. There is no data to suggest this assumption is true.

Finally, COSTHA would like to give an example of what level of regulation HM-224F proposes. Today, a primary (non-rechargeable) lithium battery, such as a AA, AAA, or 9-volt battery, typically contains 6% lithium metal or alloy (varies slightly by manufacturer). Given that a battery weighs 14.5g (AA), 7.6 g (AAA), and 33.9 g (9-volt), that would mean each battery would contain 0.87 g (AA), 0.46 g (AAA), and 2.03 g (9-volt), respectively. Under the HM-224F provisions, AA, AAA, and 9-volt batteries shipped by themselves, packed with, or contained in equipment would be regulated as a Class 9 material (with spec packaging, shipper's declaration, etc.) when shipped by air to from or within the United States. Is PHMSA or the FAA prepared to open enforcement cases against every shipper of toys, tools, electronics, and medical devices when offered via the US Postal Service (COSTHA assumes the USPS would update USPS Publication 52, Section 349.221 and 349.222 to reflect changes proposed in the NPRM)? COSTHA believes the elimination of the air exceptions (and the disharmony with international regulations) creates an unenforceable, burdensome regulation that does not improve safety but instead increases confusion, unnecessarily costs business millions of dollars, and will lead to an increased number of noncompliant and unsafe lithium battery shipments.

### **Cost-Benefit Analysis**

In order to justify the perceived improvements to safety, PHMSA prepared a Cost-Benefit Analysis (C/B) to compare the additional costs to industry against possible financial savings by avoiding incidents. We take issue with two separate issues within the (C/B), being the number of shipments and the training costs.

#### *Number of Lithium Battery Shipments*

The C/B determined the estimated number of cells shipped in 2008 by calculating the total number of lithium cells and batteries sold (3.3 billion) and then estimating only 20% of the number of batteries sold were transported by cargo aircraft. Thus, the report suggests 400 million small lithium cells were transported aboard aircraft in 2008 (C/B, pg 7).

COSTHA believes PHMSA has failed to account for multiple shipments of the same cell/battery. For example, the manufacturer may sell and transport their battery to a customer (device manufacturer) who then installs the battery in a device. The device is then transported to a distribution facility and eventually may be moved to retail centers. Customers do not purchase devices only from retail or wholesale site locations, however. Online sales of electronic devices have skyrocketed in recent years. Indeed internet sales from on-line retailers is often more profitable because of lower overhead costs, and therefore has been actively promoted. Many of these items are then sent overnight, next day air, 2 day air, or even 3-5 day via USPS. When batteries or devices are returned, they are again sent by these methods. Additionally, PHMSA does not account for the sale and movement of lithium batteries from auction sites. A quick search for lithium batteries on one such site resulted in over 13,000 active auctions, many of these offered delivery by USPS or air parcel shipment. One COSTHA member estimates they transported greater than 20 million lithium battery shipments from just a few of their nearly 2 million customers. This number exceeds even the largest number discussed in the C/B Analysis by 4 million shipments.

Regarding the number of actual batteries placed into packaging, PHMSA assumes industry would utilize the most cost effective means to ship the batteries. In the section discussing current packaging requirements (C/B Section 2.1), PHMSA identifies two types of shipments, packages containing 24 or less cells, and packages containing more than 24 cells. PHMSA estimates that 16.67 million packages are offered in the former packaging, while 2 million packages are offered in the latter packaging. When PHMSA reviews the actual cost of the additional packaging in Section 3 of the C/B document, they only review the number of packages that would contain more than 24 cells (2 million shipments). Since this number assumes the shipper will ship 200-250 cells per outer package, PHMSA is greatly underestimating the number of actual shipments. Our membership indicates the actual number of shipments that contain 200-250 cells per package is minimal. Such a shipment is more indicative of cell/battery shipments from cell/battery manufacturers, not retail and distribution, or movement of equipment. Therefore, COSTHA suggests the actual number of shipments would greatly exceed the 16.67 million packages referenced in Section 2.1.1 of the C/B Analysis. Simply using the number referenced in the C/B document, the actual cost of the 4G outer and 2 mil inner bags is \$79 million (16.67 million x \$4.75 per package) at the lowest cost option, and \$300 million (16.67 million x \$18.00 per package) at the highest cost option. COSTHA acknowledges the actual number of shipments is a combination of the 200 per package and 24 per package. Since PHMSA fails to account for the “less than 24 per package” option, which COSTHA members most often utilize, the C/B Analysis discounts significant packaging costs that will be imposed on industry. The number of batteries shipped within electronic equipment such personal communication devices, medical equipment, and other such energized items have likewise not been accurately included in the C/B analysis.

### **Training Costs**

PHMSA estimates training costs within the C/B Analysis in Section 3.1.6. PHMSA first provides an equation for total cost of training. The equation is:

$$TC = (NUM / ST) \times [CL \times (INC + EC)]$$

*Where NUM is the number of employees requiring training, ST is the number of students per HAZMAT class, CL is the length of the HAZMAT course in house, INC (although Table 3-1-6 uses the abbreviation INS) is the cost per hour for a HAZMAT instructor, and EC is the average hourly wage of an employee who is taking the course.*

COSTHA takes issue with the logic of the equation. The equation above combines the cost of the instructor (INC/INS) with the cost of the employee (EC) per hour, and then multiplies the total cost per hour by the course length (CL). That number is then multiplied by the number of students (NUM) divided by the number of students per course (ST). Therefore, this equation assumes the cost per student is only the course length (CL) times the number of classes (NUM/ST) times the hourly cost (EC). In other words, the equation assumes the cost is only hourly wage (\$21.17) times the course length (5) times the number of classes (821). This is the cost for one (1) student per class, not 27.

COSTHA believes the actual equation which should be used is:

$$TC = NUM/ST \times CL \times (INS + (ST \times EC))$$

*Where all variables are the same as the PHMSA Equation.*

PHMSA failed to multiply the number of students per class in determining the cost per class. Therefore, PHMSA's numbers are 27 times less than actual, using the numbers provided in Table 3-1-6.

COSTHA is unsure how PHMSA reached the numbers presented in the C/B Analysis (\$674,000). Using the existing equation, we calculate the PHMSA TC to be \$292,245. However, using the corrected equation, the cost of training using the existing values in Table 3-1-6 is \$2.55 million. PHMSA suggests this number should be divided by 3 (as training only has to occur every 3 years), however PHMSA fails to recognize these are new requirements, and therefore all personnel would have to be trained immediately (or within 75 days if the compliance date in the NPRM is adopted). Additionally, PHMSA does not account for the fact that air carriers, operating as HAZMAT employers under FAA certificates must train every 2 years per 14 CFR 121.1005(a), and air carriers represent both shippers and transporters of lithium batteries.

We are also concerned that PHMSA's estimate of the number of employees which would be affected by this Rule is limited to 22,174 (C/B, Table 3-1-6). A quick survey of 23 companies within our membership and companies who may be affected by this rule estimate they have nearly 27,000 employees themselves. These companies are not battery manufacturers and do not appear to have been included in PHMSA's calculation. We question where PHMSA arrived at the number of employees, and whether that number is truly representative of the shipping community affected by this rule. COSTHA believes PHMSA has not identified or adequately calculated the possible training costs to the retail, distribution, and transport industries.

We suggest a different methodology be used to calculate training costs. Table 1 below summarizes PHMSA's information from Table 3-1-6 in Column 2. Column 3 provides total costs based on the actual numbers provided in COSTHA's survey. Column's 4 through 6 provide the COSTHA proposed methodology.

**TABLE 1**

(Col. 1)	PHMSA Cost Formula		Recalculation with corrected formula, class length, and population Values		
	PHMSA Published C/B Analysis (Col. 2)	COSTHA Survey Values (Col. 3)	Initial (Col. 4)	Recurrent (Col. 5)	3 year interval (Col. 6)
INS	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00
CL	5	5	8	1	1
ST	27	27	27	27	27
EC	\$21.17	\$21.17	\$21.17	\$21.17	\$21.17
NUM	22,174	54,202	26,943	27,259	54,202
PHMSA C/B Total	\$292,245.11				
Revised Total	\$2,552,432.71	\$6,239,152.07	\$4,962,222.04	\$627,552.66	\$1,247,830.41
Total Cost	\$2,552,432.71			\$5,589,774.70	

We believe 5 hours for an initial course to train a new hazardous material employee is not sufficient. Many US companies train their hazardous material shipping employees in initial courses ranging from 4-24 hours depending on their job function. However, a more realistic number would be 1 day (to train a non-hazmat employee to be a hazmat employee) or 8 hours. Therefore, based on the 23 company survey, this number would be at least 26,943 new hazmat employees. All existing hazardous material employees would have to be trained in the new requirements. We estimate that such a course would be hour (to update new procedures, requirements). Based on the 23 company survey, this would be at least 27,259 employees. Therefore, Column 4 represents the impact on initial training; Column 5 represents the impact on recurrent training. These two costs combined represent the total initial cost of the NPRM. Using the Corrected Equation, COSTHA estimates the training cost to be at least \$5.5 million, for 23 companies. Column 6 calculates the 3 year cost of recurrent training, \$1.2 million every three years (does not account for Air Carrier training every 2 years).

Given these numbers, COSTHA believes PHMSA has greatly underestimated the cost of training, by at least 1,900%.

#### **Compliance Date**

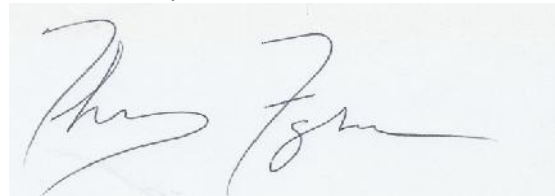
As stated in numerous locations within this document, COSTHA members do not believe 75 days is enough time to implement the proposed changes. Specifically, the elimination of the air exceptions for small batteries, the marking requirement for small batteries by vessel, the quality marking requirement, the packaging and stowage requirements, and the necessary training will take many months to initiate, much less complete. COSTHA is not aware of any feasibility studies that have been done to determine if one industry is capable of meeting these deadlines, much less all affected industries. Improved safety is of course paramount. However such a short timeline for implementation may also cause some shippers to cut corners or expedite training just to show compliance. This NPRM does not support quality training

and compliant packaging. Instead it promotes pure training compliance without consideration for quality. We suggest at least 12-18 months would be required for industry to adequately and appropriately prepare quality training programs and shipping procedures that full comply with the intent of the NPRM: increased safety.

COSTHA appreciates the opportunity to provide comments on this significant rulemaking. We applaud PHMSA's efforts to harmonize with international standards regarding proper shipping names, nominal energy descriptions, and classification criteria. We are also supportive of PHMSA's efforts to consolidate the lithium battery regulations into a single section in the HMR. We take extreme exception, however to the assumption that increased regulation above international standards is needed to ensure safety. To the contrary, we believe the biggest factor in lithium battery incidents is ignorance to the existing regulations or willful negligence. The former can and must be addressed through public awareness campaigns, many of which can and would be supported by retailers, carriers, and trade associations. The latter can only be reduced by appropriate and visible enforcement.

Our membership is dedicated to the safe transportation of lithium batteries. We appreciate your consideration of our comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas W. Ferguson', is centered on a light blue background.

Thomas W. Ferguson, PG, CHMM, DGSA  
COSTHA Technical Consultant