

## UNSCOE TDG 50th Session – November 28 – December 6, 2016

### Discussion of Papers

#### Day 1 – November 28, 2016

The Subcommittee reviewed the papers to be reviewed by the Explosives Working Group (EWG):

**WP53** – AESIG suggested the removal of a comma in 2.1.1.1. Spain supported the approach. The paper was referred to the EWG.

**WP60** – Sweden and AESIG identified a number of discrepancies in 10.3.3.3 and 10.3.3.4 and proposed revision to the sections to clarify the approach. No new requirements are suggested. Germany voiced concern over the proposed amendments as it appeared to be more restrictive. The paper was referred to the EWG.

**WP61/INF23** – CEFIC explained new chemicals may have explosive properties and may need to be transported for testing. However, unlike other hazard classes, the Model Regulations do not include provisions for consigning samples of explosives or self-reactive materials. The paper presented test data for future consideration in INF23. The Netherlands commented the proposal in INF23 is very prescriptive and questioned whether additional flexibility would be possible. Germany supported the CEFIC approach and added the specificity in INF23 is necessary based on current experience. The paper was referred to the EWG.

**WP66/INF9/INF47** – Sweden felt the classification on ammonium nitrate based fertilizers is unclear, and based on discussions held during previous sessions, proposed a new Section 39 to the UN Manual. Sweden emphasized no changes to existing classifications are intended. AESIG voiced support for the effort but provided several opposing views on the proposal in INF9. IME provided additional comments to the paper in INF47. The papers were referred to the EWG.

**INF33/INF44** – Italy revisited their concern for N.O.S entries for explosives that may be exempted from consideration as High Consequence Dangerous Goods for security purposes. They proposed a temporary solution until the full definition of high consequence dangerous goods was revised through the efforts to include GHS in the UN Manual as well. Germany indicated they would not be ready to adopt the proposal due to the late submission of the INF paper. The UK presented an alternate method to address the problem in INF44. They suggested the discussion would lead to a formal paper at a future session. The papers were referred to the EWG.

**INF30** – AESIG discussed the identification of electronic detonators adding they believed the current entries do not adequately address them. They requested the EWG discuss proper identification of the entries. The paper was referred to the EWG.

**WP83/INF7** – The Chairman of the EWG presented proposed changes to the UN Manual in the context of the GHS. The paper was referred to the EWG.

**INF14** – Germany provided comments on the changes proposed to Section I of the UN Manual. The paper was referred to the EWG.

**INF17** – The US and Canada supported the effort of the EWG on reviewing the Manual but added caution in adopting the changes too quickly. They requested additional time to review adding the impact to sectors other than transport must be considered. Germany agreed with the US and Canada stating the work should continue into the next Biennium. France and Belgium agreed as well. The Netherlands requested the EWG make progress on the review during the week and report on their effort. The paper was referred to the EWG.

**INF36** – The Secretariat provided necessary corrections to the UN Manual that will be included in a future corrigendum.

**INF11** – Sweden provided a status report on the work of the informal group on the revision of GHS Chapter 2.1 (explosives). No formal proposals were included. The paper was referred to the EWG.

**INF18** – The US provided comments on the GHS Chapter 2.1 revisions and suggested the work on GHS Chapter 2.1 should occur before the final adoption of the revisions to the UN Manual proposed in WP83. The Netherlands voiced concern that the work in INF11 might not be completed during the next biennium and thus the work in WP83 should not be coupled. The paper was referred to the EWG.

**INF39** – At the request of the Chairman of the EWG and AESIG, Germany presented INF39 that discusses the stability of nitrocellulose. They noted there are differing global standards and it may be necessary to develop a single standard for transport purposes. The paper was referred to the EWG.

**WP55** – The Subcommittee reviewed previously agreed upon text related to explosives in WP55. All explosives-related changes were adopted.

This concludes the papers to be reviewed by the EWG.

**WP54** – The UK presented the latest version of the proposal for new entries for generic entries for articles, machinery, or apparatus. Sweden supported the effort, but questioned the need to introduce article construction requirements (such as in P00X, 2(a)). Sweden added additional thoughts on waste articles. Austria felt the proposal was overly complicated given the relatively small amount of articles the proposal would cover. The Netherlands supported the principle of the paper but added the more they review the proposal, the more concerns they identified. Belgium also supported the effort, but provided numerous comments and concerns. In particular, Belgium voiced concern for the requirement of PGII packaging. Germany indicated the proposal was clearly a compromise approach and provided support for the paper. France commented the Subcommittee has been reluctant to issue new entries for specific articles in the past. Therefore, this approach would remove the need for future requests. The US did not support the proposal as drafted but shared support for the effort. Switzerland did not believe the need is worthy of the complication. IATA supported the paper but suggested the proper shipping name should be “Articles containing...” to keep the entries grouped together in the Dangerous Goods List. Spain also voiced support of the proposal. The US indicated they have issued 17 related approvals over the last 10 years. The UK thanked the Subcommittee for their comments and requested a Working Group be convened to discuss the topic later in the week.

**WP49** – Germany explained the current provisions in SP301 do not permit the assignment of UN3363 for materials with a “O” in Column 7a. They would prefer to address the issue through WP54. However, if the Subcommittee does not adopt WP54, Germany proposed an alternate solution by modifying the text of SP301. The US and Canada supported the proposal with minor editorial amendments. The Netherlands preferred to compete the discussion on WP54 before taking a final decision on WP49. Belgium supported the proposal if the UK proposal did not pass. Switzerland also provided support for WP49. The Subcommittee agreed to discuss both papers (WP54 and WP49) in a lunchtime working group on Day 2.

**WP59** – COSTHA proposed revised text to P902 to clarify unpackaged articles may be transported in dedicated handling devices to or from the device manufacturer or to intermediate handling locations. Germany, Sweden, the US and Belgium supported the change. Austria questioned how often the provision would be used but also supported the proposal. Canada also supported the proposal but asked if the language should also be modified in LP902. After considering the Canadian addition, the Subcommittee adopted the text change in P902 and LP902 as proposed in WP59.

**WP64/INF42** – Based on GESAMP data, Korea proposed adding a toxic subhazard to UN2248, UN2264, and UN2357. In INF42, CEFIC supported the proposal for UN2264 but requested additional time to check UN2248 and UN2357. Germany added the data is being reviewed by ECHA. The Netherlands explained the ECHA website allows industry to use available data to determine toxicity and the data presented in

the paper supported a toxic subhazard. Therefore, they supported the proposal. Austria stated by their calculations, the data indicates UN2248 would be a Division 6.1 primary hazard, not a corrosive. Therefore, Austria supported additional discussion. The US came to the same conclusion as Austria and supported additional review of the entries. The UK agreed with CEFIC adding the European data needed to be reviewed further. After discussion, Korea withdrew the proposal and indicated they would work with other delegations to prepare a proposal at a future session.

**WP65** – Following discussions at the 49<sup>th</sup> Session, the UK and Canada proposed the adoption of a new entry for clinical or medical waste (both Cat A and Cat B) and a corresponding packing instruction. The new provisions would describe packing and packaging requirements for larger volumes of medical waste. The Subcommittee agreed to receive comments on WP69/INF37 before making a decision on WP65.

**WP69/INF37** - Germany identified that the proposal in WP65 includes reference to packaging construction requirements in 6.1. However, Germany felt 6.1 was not appropriate, and preferred the requirements of 6.3 apply (9 m drop test, for example). Therefore, they proposed modifying the existing entry for UN3291 to include reference to Category B, and provide a new entry for medical waste containing Category A. Germany also provided a number of additional revisions to the proposed packing instruction in INF37.

**Discussions on WP65 and WP69** – Sweden supported the concepts in both proposals. They voiced concern for the UK/Canada proposal in that it might lead to the shipment of materials that should be classified as UN2814 or UN2900. Sweden added concern for the German packing instruction as well as it presents problems at incineration locations. France stated the German proposal was closer to the guidelines agreed by the Subcommittee at the 49<sup>th</sup> Session and therefore they supported WP69. The added clarifying language on how to calculate “equivalent evaluation methods” on drop height. The Netherlands voiced support for the UK/Canada proposal. Austria supported the German approach. The US agreed with the Netherlands in support of WP65. Belgium supported provisions that are as close to the existing provisions as possible. They felt the German proposal was more aligned with the current provisions. They did not support the creation of a new entry for Category B wastes. Norway did not have a strong opinion on either option but preferred both to the current provisions. They added both proposals would drop the clarification that the substance is infectious to humans or animals only and suggested “unspecified” be replaced with “affecting humans” or “affecting animals”. Spain supported the German proposal. The UK provided comments on the German proposal indicating the packaging tests would need to be conducted and should not be calculated. The UN does not permit equivalent testing elsewhere in the Model Regulations and introducing it here would be a new precedent. France reiterated the ability to determine 9 m testing equivalency should not be difficult. Germany noted their medical professionals were not satisfied with either proposal. After the afternoon break, the Subcommittee agreed to have a lunchtime working group on Day 3 to develop a consensus proposal.

**INF19** – Norway proposed to split the requirements for pressure and temperature clarifying they are separate but accumulative approaches. The US and Sweden supported the proposal as drafted. The Subcommittee adopted the provision as proposed.

**WP72** – Austria proposed to add the words “TEMPERATURE CONTROLLED” to the proper shipping name for polymerizing substances that are required to be shipped under temperature control but do not already include the words in the proper shipping name. Germany supported the proposal. The UK pointed out the Subcommittee reviewed this approach when adopting the polymerizing substances regulations and chose not to adopt the PSN change at that time. The US agreed with the UK and explained there would be several consequential impacts, including a duplicative requirement to include both “STABILIZED” and “TEMPERATURE CONTROLLED”. The Netherlands indicated concern over the use of STABILIZED and TEMPERATURE CONTROL together and felt additional discussion needed to be had on the topic. ICCA agreed with the comments from the Netherlands. Austria responded to comments from the Subcommittee and explained stabilization and temperature control are not mutually inclusive and may be combined given certain transport conditions. They requested a vote on the proposal. By a vote of 6-4, the proposal was adopted.

**INF29** – CEFIC noted there are no exemptions for polymerizing substances. To address this omission, CEFIC provided testing data justifying such exemptions, and proposed new text in 2.4.2.5.3. Spain voiced continued concerns for providing exemptions as the exemptions are based on packaging and not dependent on the actual material. The Netherlands shared Spain's concerns and noted the proposal is not clear whether it applies to stabilized or temperature controlled materials. They also voiced reservations on the quantities proposed. The Netherlands preferred to discuss this topic in the next Biennium. Germany defended the use of packaging in the exemption pointing out the classification criteria uses packaging considerations. Given the time, the Subcommittee agreed to finish discussion of INF29 on Day 2.

### **End of Day 1**

### **Day 2 – November 29, 2016**

**INF29** – The Subcommittee continued their discussion on the CEFIC paper on exemptions for polymerizing substances. The UK supported the work but requested CEFIC return with a formal document during the next biennium. The US did not feel the data justified CEFIC's conclusions but indicated a willingness to review the issue further. CEFIC indicated they would return in the next biennium with a formal paper.

**WP50/INF5/INF25** – Canada/CEFIC/AISE proposed amendments to the previously adopted text for 2.8 related to the classification of corrosive mixtures. The UK supported the changes and made minor editorial amendments (replacing "must" with "shall"). Austria supported the paper but suggested further harmonization should be the ultimate goal. Belgium agreed with Austria. The US supported the proposal and applauded the effort. Switzerland questioned whether the references to the OECD guidelines was correct. The Netherlands suggested the TDG Subcommittee report to the GHS Subcommittee on the problems encountered during this process. Korea also supported the proposal. Several delegations requested the consolidated text be presented for full consideration. The Subcommittee discussed several editorial changes to the text in INF5 and INF25. Canada indicated they would collect additional comments and return in the session with a consolidated document for final consideration.

**WP82/INF24** – IFFO updated the Subcommittee on the issue of ethoxyquin in fishmeal. They stated the EU has placed a prohibition on the use of ethoxyquin but an exemption still exists for fishmeal until 2019. However, the fishmeal industry is being pressured to eliminate the use ethoxyquin as soon as possible. Therefore the effort to approve a replacement antioxidant is becoming critical. IFFO proposed to revise SP308 to closer harmonize with special provisions found in the IMDG Code that reduces the required ethoxyquin in fishmeal at the time of consignment. Belgium questioned why the proposal was being offered "provisionally". IFFO indicated the proposal is based on the most current data but ongoing investigations may identify additional antioxidants or concentrations to be added. The UK recommended the IMO CCC review the data before a final decision is made by the Subcommittee. IMO asked whether the SP308 proposal would lead to consequential changes in the IMDG Code. The Netherlands supported the effort but also questioned how the proposal would impact the IMDG Code. The US explained the IMDG Code includes references to antioxidant levels at the time of production and at the time of consignment. The Model Regulations only contain levels at the time of consignment. If the proposal is adopted, the IMO CCC will be required to recalculate the production levels indicated in the IMDG Code. Germany and Belgium agreed with the US comments. Belgium requested IFFO attend the IMO E&T meeting in May and the CCC in September to participate in discussions at those meetings. The proposal was adopted with minor editorial amendments.

**WP52** – Germany proposed adding large packaging provisions for prototype and low production lithium batteries. Sweden supported the proposal, Option 1. France stated the need to clarify multiple batteries may be installed in equipment was necessary. The US also supported the effort and agreed with France's comments. Austria felt either option was beneficial. The Netherlands suggested subparagraph (a) from the packing instruction could be placed as a general statement in Chapter 4 instead of in the packing instruction. Belgium supported Option 1, but noted concerns for the consequential amendments to LP903.

Canada preferred Option 2 questioning whether “rigid” was redundant and why 50G was not provided as a packaging option in LP904. The UK provided editorial amendments to the proposals. The Subcommittee continued discussion of the paper, providing general support for the approach. After further discussion, Germany requested the Subcommittee consider adopting Option 1 taking account of several editorial amendments. They also indicated they would not propose the Canadian suggestion to add 50G as a packaging option to LP904 as that was beyond the scope of their paper. The Subcommittee agreed to Option 1 of the proposal as amended.

**WP56** – Germany proposed to adopt provisions regarding container tracking devices containing lithium batteries. They acknowledged some delegations may deem such devices would not be subject to the Model Regulations per 1.1.1.2(a). However, Germany felt even in these cases, the batteries must meet some minimal requirements. The new provisions were proposed to be included in 5.5.1. CEFIC pointed out similar devices are used for temperature measurement and perhaps the description should be broadened. Sweden questioned whether changes to 5.5.1 would override 1.1.1.2(a). They also requested additional information on such devices and asked if they are small, whether the risk is significant. Switzerland suggested the reference to cargo transport units should be revised as this term could also include certain vehicles. Belgium did not believe the Model Regulations was the appropriate location for the provisions. Norway did not believe the risk justified the proposal and requested information on any incidents related to CTDs. The US indicated their willingness to include general provisions in the Model Regulations, and they made editorial suggestions. IATA explained other regulations have expanded the need for an increase in the size and complexity of the devices. IATA further suggested these devices are also being used on packages today, and suggested the Subcommittee should review the topic further. Austria supported adopting limited provisions for this particular application as proposed. The Netherlands agreed with Belgium that the Model Regulations may not be the appropriate location for these provisions. Germany defended the inclusion of the section in the Model Regulations adding the container codes under the IMO are not mandatory. Switzerland and France agreed that something should be done and perhaps the language could be placed in 1.1.1. Belgium pointed out the batteries in the device are not the only concern but also the requirement for the device to be safe. Germany withdrew the paper and will bring a revised paper forward at a future session.

**WP67** – OICA discussed introducing new packaging instructions for damaged/defective batteries that could be used without competent authority approval. The Netherlands questioned whether the provisions would require proof that the batteries are damaged or defective. They also voiced concern over the subjective requirements of “no hazardous flame outside” or “no hazardous ejection fragments”, and that damage to the packaging may be appropriate to reduce the energy of a battery incident. They found the document a step in the right direction and requested the information in the Annex be captured somewhere in the Model Regulations. The UK agreed with the Netherlands and commented many of the provisions P9XX would be better placed in Section 6. They suggested the discussion should be thoroughly discussed by the Informal Working Group on Lithium Batteries (IWGLB). Austria noted the proposal addresses situations that are not clearly defined, and questioned how a gas management system could be implemented. They did not believe the packing instruction needed to include a temperature limitation. Canada suggested sacrificial packaging should be permitted, and agreed the proposal should be referred to the IWGLB. Germany supported the paper noting the proposal is based on existing approvals. With minor editorial amendments, they supported the proposal. France pointed out the determination of damage or defective batteries/cells is already included in SP376. So this proposal addresses batteries that are likely to react. They added a number of key concerns however that should be addressed within the IWGLB before final adoption. Belgium pointed out many competent authorities do not have the experience to issue such approvals. In that context, the proposal is very beneficial. But like others, they did not feel the proposal was developed enough to be adopted. China supported the work and agreed taking a step by step approach was appropriate. The US liked the fact that the proposal addresses the worst case situation. However, they pointed out the current provisions in P908 already account for batteries that may react dangerously and if adopted as proposed, such batteries would be pushed to the new packing instruction and may lead to more approvals, not less. They supported the effort, but did not want to adopt the provisions as proposed. OICA pointed out the current SP376 requires competent authority approval already, and assessment of the battery is also part of the existing requirements. Recharge reiterated the importance of adopting provisions as soon as possible. After

addressing many of the comments, OICA and RECHARGE indicated they would prepare an INF paper to attempt to address the Subcommittee's comments. France offered to help draft text that could be reviewed during the session. Switzerland agreed with France and believed the document could be revised during this session. Austria added they have already used the paper as guidance material in their country. The Chairman indicated any INF paper would be reviewed by the Subcommittee, time permitting.

**INF22** – RECHARGE presented a methodology for determining the level of hazard represented by a lithium battery. They identify three (3) levels of hazard (benign, medium, high) and discuss mitigation factors to address the hazard. RECHARGE indicated their system may be used to determine the level of packaging needed to mitigate the hazard. The US and Austria were very supportive of the approach. The Chairman questioned where the determining characteristics originated. RECHARGE explained the values were determined using data from battery testing of thermal runaways. The Chairman indicated the issue would be referred to the IWGLB for discussion during the next biennium.

**WP54** – The UK updated the Subcommittee on the progress on the Articles n.o.s during a lunchtime working group. They intend to capture the recommended revisions in an INF paper for review later in the session.

**WP77** – WHO/FAO proposed revisions to the definition of “animal material”, and explanations of patient specimens and Category A material affecting animals. Germany supported the proposal noting the new approach treats animal material the same as other infectious substances. The Netherlands voiced concern of a consequential impact to the ability to ship bulk samples of animal specimens. The revised language would prevent this practice. The Netherlands indicated they were still reviewing the changes in 2.6.3.6.2. Belgium pointed out animal body parts could be covered under either animal material or patient specimens. Further, if the changes are made to 2.6.3.6.2, there would be no difference in classification between animal and human specimen classification. Which would mean the paragraph would not be needed and could be deleted. The US generally supported the proposal and added some editorial amendments. The Netherlands reiterated their concern that patient specimens would not be authorized in bulk. Germany and the US agreed stating such patient specimens should not be sent as bulk shipments. The Subcommittee reviewed each proposal separately. Proposals 1 and 2 were adopted. As a result of adoption of Proposal 3, the paragraph 2.6.3.6.2 was deleted.

**WP68/INF16** – RECHARGE/PRBA proposed adding new entries for rechargeable lithium metal polymer batteries and such batteries packed with or contained in equipment. The paper provided data demonstrating the batteries represent the same risk as lithium ion batteries instead of lithium metal batteries. Consequential amendments were also presented. INF16 contained data for thermal runaway testing of the lithium metal polymer cells. Given the time remaining, the Subcommittee will finish discussion of the document on Day 3.

## **End of Day 2**

## **Day 3 – November 30, 2016**

**WP68/INF16 – Lithium Metal Polymer Batteries** – The Subcommittee continued their discussion of lithium metal polymer batteries. Germany agreed that Option 1 of the proposal was valid and should be adopted. However, they were not convinced new entries were needed and did not support Option 2. The US stated they believed the batteries are still best described as lithium metal batteries and were not supportive of treating the batteries as any different. They were not convinced the testing data provided demonstrated a higher level of safety than current lithium metal batteries. Austria agreed with the US pointing out there are already many different battery types, but they can all be combined into the two existing entries (UN3480, UN3090). Belgium voiced opposition to Option 1, but was understanding of the need for Option 2. They did not provide clear support but were willing to continue the discussion. China was not supportive of either option. The Netherlands indicated they were comfortable with the data from the battery design presented by RECHARGE but questioned whether other companies may develop similar but different battery designs that would not react the same way. France agreed with Belgium

stating the best of the options is Option 2. They added lithium metal polymer cells may in fact be more safe than some lithium ion cells. France believed it is important for the Subcommittee to review the lithium battery classification in the context of reactivity instead of just construction. RECHARGE reiterated the importance of understanding in lithium metal polymer batteries, lithium metal becomes intercalated with the graphite on the negative electrode, reducing the amount of lithium metal in the battery. *Based on the comments from the Subcommittee, RECHARGE withdrew the document.*

**INF43 – Lithium Batteries Installed In Cargo Transport Units** – Switzerland noted the challenges with using the new entry UN3536 and proposed changes to 2.9.2 (Proposal 1), the introduction of a new special provision (Proposal 2), and modification to SP388 to clarify the issue (Proposals 3-7). France stated they had limited time to review the document, but felt proposal 2 was not correct and proposal 7 was valuable. The US agreed with Switzerland that some language needed to be clarified, but felt that the basis for the paper was incorrect and did not agree with the bulk of the proposals. Germany agreed with other speakers that improvements could be made, but did not believe the majority of the proposals were necessary. PRBA offered to work with Switzerland on revising the document as they had authored the original paper. The UK indicated they believed the basis for the paper was a misunderstanding. After further discussion, the Chairman reminded the Subcommittee the proposal is in an INF document. He believed proposal 1 may be a straight forward idea and the Secretariat may be able to address it. Spain supported the adoption of Proposal 1. Switzerland supported the idea of taking a decision on Proposal 1 and addressing the rest of the issue during the next biennium. *Based on the discussion, the Subcommittee adopted Proposal 1 and will address the remaining issues at a future session.*

**WP74/WP75 – Lithium Battery Test Report** – Both PRBA and France proposed to adopt a list of information that would be required to be included in a lithium battery test report. In WP74, PRBA proposed the information be included in a new paragraph in the UN Manual 38.3.5. In WP75, France proposed the information be included in a new paragraph (f) in 2.9.4. The Secretariat reminded the Subcommittee the UN Manual date should be the revision number. Germany preferred the information be included in 2.9.4 as it would be more impactful, but also supported the wording presented in the PRBA proposal. Sweden felt the information should be included in the UN Manual. Austria added editorial comments and recommended the contact information be someone that may speak in multiple languages. The Netherlands preferred the text be in the UN Manual but 2.9.4 should refer to the section. Belgium agreed with the Netherlands. DGTA recommended requiring contact information for the test laboratory, not just the name. They also supported WP74. The US felt 2.9.4 was the appropriate place noting this document may be shorter than a full test report that might be prepared as a result of the UN38.3 tests. They also liked the notation on availability of information in WP75. Brazil preferred the information be contained in 2.9.4 as it would be reproduced in the modal documents, such as the ICAO TI and IMDG Code. The UK supported the requirements be contained in the UN Manual and referenced in 2.9.4. They requested the inclusion of the contact information of the test lab. ICAO preferred 2.9.4 but added that the material should be provided to the shipper as they would be responsible for ensuring the batteries are properly tested. Portugal preferred 2.9.4 but also would be satisfied with the proposal by the Netherlands. IATA agreed with the compromise position to place the requirements in the UN Manual and referenced in 2.9.4. But they also felt a certificate of conformance should be provided. Canada also supported the compromise suggestion and emphasized the information should be available to the consignor. After conferring with other delegations during the break, France indicated they would develop an INF paper that takes into account the revisions to the individual elements and includes the compromise suggestion. PRBA explained that the relationship between a manufacturer and a test lab ends at the end of testing, so providing the contact information on the test lab would be difficult. They also suggested providing a transition period to clarify the summary document would be required for batteries tested after a certain date. *The Subcommittee will revisit the topic when the INF paper is made available later in the session.*

**WP76 – Small Damaged Consumer Lithium Batteries** – PRBA proposed modifying the hazard communication requirements (dropping the Class 9 label and replacing with the lithium battery mark) for small consumer lithium cells and batteries that are damaged or defective for collection or disposal purposes. They explained the packaging requirements would remain. Germany questioned whether the proposal was for waste consumer batteries or recalled damaged batteries. They supported the approach, but did not feel the proposal was clear. Sweden preferred to delay any discussion on this topic until the

review of battery classification could be discussed. Belgium was not in support of providing any new exceptions for damaged batteries. The US supported the proposal and recommended including limits on the number of intermediate stops that could be used. China preferred the issue be handled by the modal regulations instead of the Model Regulations. DGTA explained the necessity to remove the Class 9 label as that would trigger documentation and training requirements. Reducing the level of hazard communication would improve recall efforts and remove bad batteries from commerce more efficiently. The Netherlands did not support adoption of the proposal. Canada added in their approvals, the words “Forbidden for transport by air” must be included. PRBA indicated they would prepare an INF paper for discussion later in the session. Belgium opposed additional discussion on the topic stating the majority of the Subcommittee opposed the provision. The US explained their support is based on the fact the recall company will provide packaging and the challenge is in the label and documentation requirements. France stated they could support the proposal if it was limited in scope to consumer product returns. Canada explained the benefits of a harmonized approach was preferable to individual competent authority approvals that are necessary in the current climate. Germany provided additional suggestions to improve the text. They added a transport document would likely be required for sea transport, but a form or information required to be on a document could be provided by the manufacturer. *As previously stated, PRBA will prepare a revised proposal for review later in the session.*

**WP65/WP69/INF37 – Infectious Wastes** - The Vice Chairman updated the Subcommittee on the lunchtime working group on infectious waste packaging. The WG made progress on requirements for wastes but could not find consensus on full packaging performance requirements (whether a 9 m drop test or a 1.8 m drop test with limited mass could be used). *Germany, Canada and the UK indicated they would work on a draft INF document for review later in the session.*

**INF45 – Definition of Damaged/Defective Lithium Batteries** – PRBA proposed to revise SP376 to align with the language found in the ICAO TI. It is difficult to determine whether a damaged battery continues to meet the requirements of UN38.3. Instead, they proposed to replace such language in SP376 with an explanation that batteries that have the potential to produce dangerous amount of heat, smoke, or fire are to be considered damaged/defective. Austria was not convinced the proposed language was an improvement to the existing text. France believed the reference to the UN Manual remained relevant and should not be removed, but acknowledged the language could be improved. DGTA supported the proposal noting the current language is very confusing for industry. The US supported revising the text but did not agree to drop the reference to the UN38.3 test requirements. Belgium voiced concern over the lateness of the submission and wished to take more time to review the proposal. *PRBA withdrew the paper and will return at a future session.*

**WP81/INF40 – Lithium Battery T.2 Thermal Test** – PRBA/RECHARGE proposed to reduce the storage temperature required in the T.2 test of the UN38.3 to address batteries that “fail safe” due to non-resettable circuit interruption devices (CID). Further explanation of the problems encountered with the current test conditions were presented in INF40. Germany did not agree that temperatures encountered in transport are the basis for the temperatures referenced in the test. They were agreeable to adopt the ability to test such batteries at a lower temperature after they failed the higher temperature. The Netherlands indicated the higher temperatures are likely to test other components or conditions in the battery. Like Germany, they agreed something needed to be done, but did not support the proposal. China agreed with Germany stating 60 to 80° C temperatures are possible in containers. They also questioned how many countries include such CIDs in their batteries as China has not experienced such failures. They believed cells or batteries that fail this test may be poorly designed. The US agreed with previous speakers and did not support the change. Belgium did not support reducing the standard for all batteries just to create a solution for a small number of cases. France explained the Informal Working Group on Lithium Batteries have discussed this topic in the past, but could not find an adequate solution; thus the proposal presented at this session. But they supported finding a solution. *PRBA indicate they would develop an INF paper based on the discussion for review later in the session.*

**WP84 – Lithium Batteries by Air** – ICAO updated the Subcommittee on the recent decisions by ICAO to limit lithium battery transport by air. They explained their continued concern is to properly identify and communicate specific hazards and safety risks associated with each battery and cell type offered for



transport. ICAO explained the ICAO Council met on November 28, and concluded the battery industry is relying on the aviation industry to enforce non-compliance. They explained they are interested in working with the battery industry and other competent authorities to develop a satisfactory solution. Belgium opined battery technology has outpaced the regulatory scheme and encouraged the Subcommittee to review favorably the concept of hazard classification of lithium batteries as described in INF31 from France. The US supported ICAO's request for greater granularity. But greater granularity must be based on measurement and analysis of risk. New test methods must consider transport risks. They requested risk-based criteria be developed during the next biennium, and the criteria be supported by test methods that are independent of battery construction. Sweden agreed with previous speakers and believed battery divisions can mirror those of Class 1. Sweden also commented shippers of common chemicals are more versed in dangerous goods transport regulations than those shipping lithium batteries. Therefore, they emphasized the importance of ensuring the new provisions are understandable and implementable. France suggested the IWGLB could be tasked with determining the criteria that needed to be addressed. PRBA reminded the Subcommittee of the significant efforts made by the battery manufacturing industry to improve safety. Austria supported the discussion and added the IAEA maintains a list of contacts in each country and that concept may be valuable in this arena. *The Chairman indicated the mandate of the IWGLB would be updated to include this topic.*

**INF31/Add1/Add2 – Classification of Lithium Batteries** – France noted the current classification of lithium batteries may have reached its limit to properly characterize and describe battery technologies. Therefore it might be time to consider an alternate criteria for classification, which would in turn require new testing methods. In INF31 and associated papers, they compared thermal, toxic, and mechanical hazards from fires of various batteries and other cargos. The data suggested one cannot determine gas emissions based on chemistry alone. Further, the amount of energy released during a fire varied widely with one set of batteries releasing less heat than a pallet of DVDs or plastic drums. Finally, the quantity of toxic gas released was significantly lower than some materials that are not classified as dangerous goods, and even being in the same magnitude as a pallet of salad (not clear if tossed, chopped or a wedge). The study summarized that thermal and toxic effects that may be generated by fires of several cargos (classified or not as dangerous goods):

- may vary greatly from one battery type to another,
- the effects may be lower than some non-dangerous goods or may be higher than other dangerous goods such as flammable aerosols.

Therefore, France concluded some batteries may be over-regulated while others may be under-regulated. They suggested the Subcommittee should consider developing new criteria to evaluate different battery types and technologies that will lead to packaging to limit the hazards. The US indicated the tests identified intrinsic hazards with lithium batteries that are not covered by the current provisions. The UK questioned whether the tests were done on the batteries as articles or batteries contained in packaging. France indicated they were tested as articles and did not account for the packaging. Germany noted intrinsic properties may be impacted by quality of battery design and construction. The Chairman stated the US offered to develop a work plan for the Subcommittee on this issue for the next biennium. Further, the Vice Chairman indicated the work plan would be revised to become a mandate for the IWGLB.

**INF13 – Sodium-Ion Batteries** – The UK noted the current entries do not address sodium batteries using sodium salts, not metallic sodium. They noted these batteries have the advantage that they may be discharged to zero without damaging the performance of the battery and may be transported at a zero-voltage state. Austria did not feel the batteries were different than lithium batteries, but acknowledged SP200 would need to be addressed. *The UK indicated they would return during the next biennium with a formal proposal.*

**End of Day 3**

## Day 4 – December 1, 2016

**WP55 – Consolidated List of Amendments** – The Subcommittee reviewed the agreed text from the previous three sessions. Amendments related to explosives were already confirmed on Day 1. The Subcommittee identified an inconsistency in the Lithium Battery testing table related to T.6. Participants indicated they would review the table during the morning break. *All other adopted amendments were confirmed.*

**WP71 – Lithium Batteries, Section 2.9.4 and Special Provision 310** – PRBA noted redundant information in 2.9.4 and Special Provision 310 related to violent rupture during transport. They proposed to combine this information in Special Provision 310. France supported the proposal but pointed out it is found in the relevant packing instructions as well. Austria did not oppose the proposal but questioned the appropriate wording. Belgium agreed with France. The Netherlands preferred to keep the language in 2.9.4. The US also felt it was important to keep the information in 2.9.4. China stated the UN Manual and the Model Regulations are separate documents and preferred to keep information in each of them, but they could support the revision to SP310. Germany supported adopting the change in Special Provision 310. The UK noted 2.9.4 defines the classification section for lithium batteries and therefore, they felt the language should remain. IATA supported the proposal noting the current language in SP188 appears to exempt small cells and batteries from the current conditions of 2.9.4, which is not intended. Canada and Spain supported simplification but could not support the proposal as presented. Spain further noted 2.9.4 is referenced in other locations in the Model Regulations. Thus, adopting the provision would result in having to repeat the information elsewhere. Switzerland agreed with Spain and added the UN Manual is not translated into other languages as the Model Regulations are. France addressed the Spanish comments suggesting additional language related to vehicles and equipment. RECHARGE explained that not all cells/batteries are designed with short circuit protection but packaging is used to meet that requirement. After the RECHARGE explanation, France acknowledged there appears to be a contradiction and a change is needed. The Chairman indicated the text then appears to be a proposed change, not just elimination of a redundancy. The US agreed with the Chairman and reiterated their opposition to the proposal. France requested the report reflect the fact that cells/batteries that do not have short circuit protection as part of their design must be protected when packaged. *Based on the comments from the Subcommittee, PRBA withdrew the paper and will return at a future session.*

**WP51 - Gas Tanks for Motor Vehicles** – Germany presented provisions for the transport of vehicle fuel tanks containing gas, noting the need to have provisions to move such tanks for service, repair, and installation with certain amounts of gas contained within. COSTHA supported the proposal and added an editorial amendment if Option 2 is chosen. The Netherlands felt additional editorial amendments were necessary before they could support the proposal. Switzerland wondered whether the Subcommittee were “reinventing the wheel”. They preferred to refer to regulations in other documents than to include them in the Model Regulations. Belgium preferred to not include the standards in the proposal, and asked how one could determine if damage to a fuel tank would lead to a leak. They finalized their intervention by suggesting a full documentation should be required. The US suggested revising paragraph (f) to require the 20% limit to apply to all movements of the tanks, not just those from the manufacturer to the assembly plant. They also suggested changing the word “are” to “include” in the new special provision XXX, paragraph (a). Sweden supported Option 1 but suggested paragraph (c) could be refined to define which valves must be closed when there are more than 2 valves are included. Norway supported the proposal in principle. Spain supported Option 2 agreeing with others that they were not comfortable with including all the standards, but that was a previous request from the Subcommittee. Canada supported Option 1 and agreed with COSTHA’s suggestion regarding CSA B51 Part 2. They further proposed language to address Sweden’s concern in paragraph (c). They also indicated they would add two additional standards for Canada in the future. Austria supported the proposal but requested recalled tanks for safety purposes should be exempt from the proposal. France supported the proposal and suggested Option 2 would be easier to adopt the US revisions. They also reiterated Germany added the table in Option 2 at the request of the Subcommittee. France commented the concern over the 20% filling limit may be over limiting in the case of repairs or accidents where the limit would be impractical to implement. France preferred to keep the language as presented but was willing to work on revised language if the Subcommittee supported this point. OICA reminded the Subcommittee that a similar provision already exists in the ADR (SP660).

In these cases, a safety check is conducted to ensure no leaks are present. Reducing the filling ratio for repair or accident is not practical and places a workplace safety risk on employees. The UK supported the proposal with the US addition of identifying the standard list as indicative, not exhaustive. Belgium reiterated their concern on high filling ratios for shipments other than from a manufacturer to an assembly plant. The US drafted language to address their concern. Paragraph (f) would then read "Except in the case of accident or repair, fuel gas containment systems transported from where they are manufactured to a vehicle assembly plant shall be filled with not more than 20% of their nominal filling ratio or nominal working pressure, as applicable." Germany responded that the full information on the transport document may not be known, and that is why the document exceptions were provided. The agreed with the amendments from Canada that addressed Sweden's concerns, and suggested that Belgium's concerns may be addressed at the modal level. The Subcommittee agreed Option 2 provided the best solution. *Germany indicated they would draft an INF paper taking account of all the amendments provided to be reviewed later in the session.*

**INF50/INF5/INF25/INF49 – Consolidated Amendments on Corrosive Substances** - Based on previous comments on WP50 and associated INF documents, Canada proposed revised text in INF49. Chapter 2.8 as a whole was presented. They proposed to remove the square brackets from 2.8.1.2. CEFIC explained the language in 2.8.1.2 is reproduced from and harmonized with GHS. The Secretariat questioned whether the square brackets were still necessary for the footnotes dealing with the OECD Guidelines. Switzerland indicated they had requested inclusion of a date, but as it has been proposed, there would be no transition measure for companies that have classified under a previous version. CEFIC confirmed the current language includes dates and application of the standard would only be for new classifications would not require retro-classification to the new standard. The Subcommittee discussed whether the OECD Guideline revisions would have an impact on classification, and whether a transition period was necessary. Ultimately, they decided the OECD Guideline changes did not have any significant impact on the classification and references to the Guidelines would be acceptable. The Subcommittee agreed to capture a note in the report to indicate that additional testing is not required, and to drop the square brackets on the Guidelines. *After review of the document, the Subcommittee adopted the text as presented in INF49 including the removal of square brackets.*

**WP67/INF50 – Damaged/Defective Lithium Batteries** – OICA updated the Subcommittee on the progress of the lunchtime working group on damaged/defective batteries. *A new INF paper will be prepared and submitted for review by the Subcommittee later in the session.*

**WP70/INF41 – Polymerizing Substances and Emergency Response Information** – Germany proposed to combine 7.1.5 and 7.1.6 and provided consequential amendments. In INF41, the UK provided comments on the proposal and provided editorial suggestions. The intent was restructuring of the text and not actually changing any requirements. Sweden supported the proposal in WP70 and provided several editorial amendments. The US supported the proposal in WP70 but had some concerns on INF41. Austria aligned their comments with the US. DGAC suggested the table in 7.1.5.2.5 could be updated for portable tanks to reflect " $\leq 45$  °C" instead of " $< 50$  °C". Germany agreed to the proposals by Sweden, but voiced concern for adopting the proposal in paragraphs 3 and 5 of INF41. They also preferred not to adopt the change to the table at this time. They requested the Subcommittee take a decision on the paper as amended by Sweden. The UK suggested moving 7.1.5.3.6 to 7.1.5.2 as the paragraph didn't apply to temperature control. Austria commented the paragraph did relate to temperature control and should stay. Belgium disagreed and supported the move of the paragraph. *The UK indicated they would withdraw INF41 and readdress it in the next biennium. After discussion, the Subcommittee agreed to WP70 as amended by Sweden and the UK (movement of 7.1.5.3.6).*

**INF27 – Testing Method for Readily Combustible Solids** – As a follow up from a previous session, Germany reviewed the wording in the N.1 Test in the UN Manual. Their continued investigation revealed there is "more to the story" and the issue needs further investigation. At the last session, new text had been adopted in square brackets. After further investigation, Germany believed the text was inappropriate and proposed to delete the previously adopted text. The US explained the section of the test being discussed is a screening method, and they preferred to keep the previously agreed language. The Netherlands preferred to discuss the issue further before finalizing the text, and thus supported the INF

document. Belgium agreed with the US and opposed the proposal. DGAC added the challenges with determining when the test should start, and supported maintaining the text in square brackets. *Given the paper addressed language in WP55, the Chairman took a position on keeping the text in Chapter 33 of the UN Manual. By a vote of 8 - 3, the text was maintained. The Subcommittee agreed to include the issue on the agenda for work for the next biennium as requested in INF27.*

**WP78/INF6 – Assignment of E-Codes** – The US proposed to include language in the Guiding Principles on the rationale for the excepted quantity provisions. The UN provisions were adopted prior to incorporation of the alphanumeric code (E-codes) currently in use. Therefore, the proposal was based on the language contained in the 2005-2006 ICAO TI. No changes to the Model Regulations were presented, but instead provided an explanation of the rationale behind the decisions made by the UN to adopt the provisions. Belgium asked if the list of specific footnotes was intended to include all items not permitted in EQ. The US noted the Guiding Principles already address the fact that materials that are forbidden on passenger aircraft are not permitted as EQ. They did not intend to capture all items. Sweden supported the proposal and suggested the UN should consider expanding E codes to low hazard articles. The Netherlands voiced challenges with determining what is permitted on passenger aircraft without understanding the rationale from ICAO as to what is and is not allowed on passenger aircraft. *The Subcommittee agreed to the proposal in WP78 and added a note in the report to work further with ICAO to determine further rationale to consider.*

**WP57/INF3/INF3rev1 – Maximum Capacity of Composite Packagings (6HH1)** – Based on testing data contained in INF3/INF3Rev1, ICPP proposed increasing the maximum capacity of 6HH1 for PG I from 120 L to 250 L. The US supported the amendment as proposed. Belgium supported the proposal, but added the drum given as an example would not have been approved in Belgium. The UK opposed the proposal indicating that the philosophy of capacity limits for composite packaging limited PG I packaging to ½ the limit for PG II or III. They suggested the opposite revision should be adopted; 6HA1 and 6HB1 capacities for PG I should be reduced to 120 L. They added decisions at the UN should not be based on economic need but on safety. Sweden indicated if the packaging can pass the testing provisions, they do not believe capacities should be limited. Germany supported the proposal as drafted. ICBCA commented the limits were originally based on IMDG limits but the need to be flexible was acknowledged. Based on testing data, they supported the revision. *Based on the discussion and a vote of 11-0, the Subcommittee agreed to the proposal as drafted.*

**WP79/INF34 – Testing Requirements for Bromine Portable Tanks** – The US pointed out TP10 requires annual inspection of the lead lining to ensure the integrity of the lining remains. Bromine is reactive with aluminum and other metals. However, there is no grace period for transport if the lead lining has expired. Therefore, they proposed adding a 3-month period after emptying but before cleaning when the tank may be transported without approval. The US provided test data in INF34 supporting their proposal. The Chairman made a minor editorial correction. The UK supported the proposal. Belgium indicated they were the start of the problem as they discovered non-compliant tanks. They were concerned the 3-month period was very long compared to an annual inspection. The Netherlands stated they did not have a chance to review the data and indicated they needed different data to make their determination (original thickness). Canada and Austria also supported the proposal. In answer to the Netherlands, the US indicated industry practice is to start at 10mm. Further, they explained the data shows even when the lining has been reduced, the erosion did not occur more than 50% of the 5 mm thickness. *The Subcommittee agreed to the proposal by a vote of 14-1.*

**WP51/INF53 - Gas Tanks for Motor Vehicles** – Germany presented a revised proposal INF53 based on comments from the Subcommittee earlier on Day 4. They made an editorial amendment in paragraph (f), replacing “Exempt in” with “Except for”. Several small editorial amendments were suggested. Belgium questioned how tanks that were overfilled or damaged could be handled. Germany pointed out the situation would be addressed in Note 2. *Based on the discussion, the Subcommittee agreed to adopt the proposal in INF53 as amended.*

**WP80 – Classification of Mixtures of Environmentally Hazardous Substances** – The US pointed out text in 2.9.3.4.6.5.1 does not appear to be appropriate for inclusion in the Model Regulations. Instead this

appeared to be appropriate for safety data sheets from the GHS. The Netherlands explained the purpose of the text is to explain to the transporter the data used for classification may not be complete. Therefore, it should be retained. Germany disagreed with the Netherlands stating classification is the responsibility of the shipper not the operator. They supported the proposal as drafted. CEFIC pointed out the classification data should be available in the SDS and would not be needed by the transporter. Belgium and France supported removing the text. *The Subcommittee agreed to the proposal as drafted.*

**INF26 – Marking and Documentation of Large Salvage Packagings** – Germany identified amendments necessary to fully incorporate the provisions of large salvage packagings into the Model Regulations. *The Subcommittee agreed to the proposal in INF26.*

#### **End of Day 4**

#### **Day 5 – December 2, 2016**

**WP63/INF4 – UN1386 Seed Cake Differences** – Spain noted differences between the IMSBC and IMDG Codes and the Model Regulations with relation to seed cake. This was discovered during the 49<sup>th</sup> Session when reviewing differences that have occurred due to translation. Spain believes all documents should be harmonized on classification and identification. Therefore, Spain recommended the Subcommittee review the topic and develop a strategy to harmonize the classification of seed cake. IMO acknowledged the IMSBC and IMDG Codes are different, but added safety must take precedence over harmonization. They added a working group to review the problem has been established by IMO and they are still reviewing the issue. IMO indicated they would report to the Subcommittee any progress made, but stated the process will not be quick. The Netherlands and the US indicated support for the effort and preferred to let IMO work through the process before the UN took any action on the topic. The UK agreed as well. The Subcommittee acknowledged work would continue at IMO, but would prefer to find a harmonize classification solution.

**WP67/INF50/INF55 – Damaged/Defective Lithium Batteries** - OICA presented INF55 which included the revisions mentioned at the Day 4 lunchtime working group. The proposal does not include any changes to P908/LP908 but instead creates new P/LP packing instructions to permit CA approval of packaging instead of full transport conditions. Austria reiterated their concern over how to determine when this packing instruction would apply. They opposed the use of fibreboard or plastic packaging, and questioned whether it was possible to create a packaging that will meet these requirements. Finally, Austria questioned whether this solution is multi-modal as it would not likely be permitted by air or vessel. Germany made two editorial amendments. Belgium felt vessel transport would be necessary and added an editorial amendment. The US supported the paper adding a number of editorial amendments. They also defended the use of 4G packaging indicating they would not want to limit industry if they can develop packaging using fiberboard materials to meet the requirements. France felt this was not a perfect solution, but stated it was a good compromise solution. They preferred to add the bullet points in the additional requirements from LP9XX and ensure the note would remain the same in both packing instructions. Spain stated they do not have much experience with issuing such approvals, and appreciated the proposal. DGTA questioned whether CA approval was still necessary or could be removed. The Chairman explained the proposal would require packaging design approval, but approvals would not be required for each individual shipment. Canada supported the proposal in principle but added concern over using fibreboard or plywood packaging. They also preferred to note that the provisions would not be allowed by air. The Netherlands supported the proposal and requested delegations share test methods for packagings. Germany suggested including the bullet points on short circuit should be included in P9XX but not in LP9XX. Switzerland supported the approval noting it will reduce the number of approvals today. France reiterated the importance of retaining the packaging approval and that a copy of the approval would need to accompany the shipment as the packaging approval may include additional transport provisions. The Subcommittee concluded discussion of the paper by addressing several of the editorial amendments issued over the microphone. The UK preferred not to restrict the packaging construction materials but instead to leave that issue to industry. The US noted the term “structural integrity” is used in the SAE work on lithium battery packaging for ICAO and recommended it be used in P9XX/LP9XX

paragraph (d). After responding to the proposals, OICA requested the Subcommittee consider the proposal for adoption. *By a vote of 11-1, the proposal was adopted as amended.*

**WP76/INF52 – Damaged/Defective Lithium Batteries** - PRBA presented revised language for inclusion in SP376 to address small damaged/defective lithium batteries being shipped from consumer or retail locations. The paragraph would provide exceptions for marking/labeling, documentation, and training requirements similar to those given in SP188. The US requested clear delineation between these batteries and those just discussed in INF55. Germany was not convinced a provision for damaged/defective batteries was needed for consumer shippers as the same problem is present for non-damaged batteries being shipped by consumers. They preferred to study the issue further. The Netherlands was not comfortable providing such broad exceptions to retail locations noting the large volume of batteries that could be shipped from these locations. Brazil did not support the proposal, but offered editorial amendments if the text were to be adopted. Belgium voiced concern the proposal broadened the original intent and did not support adoption. PRBA explained the purpose of the proposal was to address recall programs. Germany added their concern was that the provision provides exceptions for damaged/defective from training while other batteries shipped from the location would require training. Belgium added the paper appeared to be a new proposal and voiced opposition to reviewing a new proposal late on the last meeting of the biennium. DGTA supported the proposal and offered to discuss the issue with delegations to address their concerns. *The Chairman agreed to delay decision on the paper until later in the day, time permitting.*

**WP54/INF54 – Dangerous Goods in Machinery, Apparatus or Articles, N.O.S.** – The UK presented a revised proposal that took account of the comments on WP54. The entries were modified to be easier to find in the alphabetical list, address issues of lithium battery labeling, removal of the EQ provisions and make consequential amendments in other parts of the Model Regulations. The new packing instruction will only apply to certain hazard classes, but provides for competent approval when transport is necessary. The Subcommittee discussed whether entries should be retained for materials subject to SPXXX and competent authority approval. Belgium supported the proposal, but requested more time to review the full language. They preferred to delay adoption until the next biennium. The Netherlands questioned how 2.0.5.5 applies to labeling. Canada supported the proposal and indicated their preference to adopt during this biennium. The US supported the proposal suggesting editorial amendment. Germany withdrew their opposition and acknowledged with an editorial amendment SPXXX, they supported adoption of the revised text. Switzerland questioned the language in 2.0.5.1 and did not feel it was in agreement the existing provisions on N.O.S. Therefore, they requested the document be referred to the next biennium. Belgium added the need to address documentation in Chapter 5.4. Austria supported the proposal in principle but added concerns on identifying all hazards in the article. After the lunch break, the UK addressed concerns made by several delegations and indicated revised text in 2.0.5.6, 5.2.2.1.13.1 and an update to the alphabetical listing in the Model Regulations. Belgium reiterated their concern for passing the document in the current condition. They noted the text does not include reference to marks and documentation. Switzerland supported the revised text in principle but pointed out the logic of the proposal is difficult to follow and a strict review of the process to choose the proper shipping name may not point the user to these entries. The US explained many of the concerns voiced have been discussed previously and in some cases, agreed upon by various delegations. They were content with the status and supported the proposal as amended. The Netherlands preferred not to adopt text that remained incomplete, noting 6.1 and 5.2 may still need consequential amendments. Germany addressed concerns voiced by Germany and Switzerland and supported the proposal as amended. Canada, Spain, and France supported the proposal as well. *After further discussion the Subcommittee adopted the proposal as amended by a vote of 13-1.*

**WP74/WP75/INF51 – Lithium Battery Test Report** - The Chairman explained interested participants discussed INF51 during the lunch break to ensure the language is correct on the test report. While many delegations agreed with the proposal, there remained concerns on the actual language. *The Chairman indicated the Subcommittee would delay the discussion of the paper until Day 6 to permit additional review of the INF document.*

**WP65/WP69/INF56Rev1 – Transport of Category A Infectious Wastes** – Based on comments received earlier in the Session, Germany/the UK/Canada presented revised text and new packing instructions to address medical wastes containing Category A. They revised UN3291 to include Category B wastes, and proposed a new entry for medical wastes (as an N.O.S. entry). Norway indicated they remain concerned about a number of issues, including the lack of marking and drop height requirements in 6.1, instead adopting the drop test as a capability requirement. They acknowledged the provisions will permit CA to approve packagings which is not an option under the current provisions. Therefore, they provided their cautious support. France supported the proposal, noting as this situation is a special case, they preferred not to include text in 6.1. The US voiced concern that the document in INF56Rev1 is significantly different than the previous two working documents or discussions in prior sessions. In particular, they are concerned about the proposed changes to the existing entry UN3291 and preferred to delay decisions on the document until they could confer with their health authorities. They shared the concerns of Norway and stated the proposal does not solve the problem at hand. Belgium agreed with the US and added inclusion of package testing requirements is not the normal way of addressing packaging performance tests. They also strongly opposed any changes to the proper shipping name for UN3291 until additional discussions could be had on the topic. The Netherlands was not satisfied with the compromise solution either and preferred to discuss the topic with their health officials before the proposal is adopted. IFDI noted fibre drums meeting PG I performance standards are available globally and requested they be included as an option in P62X. The Secretariat pointed out the drafting of the packing instruction is not in a form that is typically used in the UN. Germany, the UK, and Canada voiced appreciation to the delegations that provided input and acknowledged the proposal was a compromise solution. Austria pointed out packaging performance requirements are already found in P650 so the concept was not new to the PIs. *After further consultation. The authors agreed to withdraw the proposal for this session. Canada will coordinate an intercessional working group to develop text for the June Session.*

**Election of Officers for the 2017-2018 Biennium** – The Secretariat reported that the only nominations for Chairman and Vice Chairman were Mr. Pfund (USA) and Mr. PFauvadel (France), respectively. *Having no other nominations, the Subcommittee re-elected these individuals for the next Biennium.*

**WP55/INF57 – T.6 Cycling Requirements, UN38.3** – France corrected an inconsistency that was discovered during the review of adopted text in WP55 regarding the new tables in UN38.3. Due to a copy and paste error, the incorrect text was adopted at the last session. *Although there was no input from the Subcommittee, the correction was adopted as identified in INF57. This also completes review of consolidated texts from WP55.*

**INF38 – Exemption for 2.2 Gases as Absorbed** – Germany suggested removing adsorbed gases from the exemption in 2.2.2.3. Austria supported the proposal. The Netherlands noted the INF paper was submitted very late and they did not have time to adequately review the proposal. The US indicated they had reviewed the proposal and supported the proposal. COSTHA agreed with the Netherlands, and while they did not note any issues with the proposal, would prefer this topic to be deferred to the next biennium to allow for more consultation. *Germany agreed to withdraw the proposal and resubmit the issue for the next biennium.*

**INF28 – Proposals of Corrections for the 19<sup>th</sup> Revised Edition, Class 7** – The Secretariat presented mistakes discovered in the 19<sup>th</sup> Revised Edition and confirmed by experts at TRANSSEC. No objections were given. *The proposal was adopted as presented. The changes will appear in an Errata for the 19<sup>th</sup> Revised Edition.*

## **End of Day 5**

## **Day 6 – December 5, 2016**

### **INF.59 – Report of working group on explosives**

*The Sub-Committee agreed with the following working group recommendations:*

- to adopt specifications for suitable alternates for dibutyl phthalate (DBP) and to publish these amendments to the Manual of Tests and Criteria in a corrigendum;
- to remove the comma after the word “practical” in 2.1.1.1(c) of the Model Regulations, 2.1.1.2(c) of the GHS, and Note b to Table 2.1.1 of the GHS;
- to adopt 10.3.3.2, 10.3.3.3, and 10.3.3.4 as amended by the working group;
- to adopt standard packaging in the Model Regulations section 2.0.4 as specified in INF.23, as amended by the working group and further clarified by the Sub-Committee, although the U.K. did not support minimum dimensions being specified for performance packagings;
- to add a new Section 39, specifically for the classification of AN-based fertilizers. The U.S. proposed to add “unless otherwise approved by the competent authority” at the beginning of 39.4.4, but there was lack of support for this;
- that interested parties should make formal proposals regarding new UN entries for electronic detonators; and
- to adopt amendments to the Manual of Tests and Criteria in the context of GHS, as described in Annex 3, Amendment 7, of the working group report. The U.S. proposed changing “manufactured” back to “transported” in 13.4.2.3.1(c) and 13.5.1.3.1, but it was decided to leave these as “manufactured”.

Due to the lateness of INF.33 and INF.44, the Sub-Committee did not agree with the working group recommendation to add Class 1, Division 1.6 to Table 1.4.1 of the Model Regulations, at this time; *the U.K. indicated that a working document will be submitted for the next session.*

*The Sub-Committee agreed with the working group recommendation to have four working group meetings during the next biennium in conjunction with the plenary sessions, as well as intersessional meetings as needed, particularly due to the amount of work regarding the Manual of Tests and Criteria. The Chair of the Sub-Committee asked Mr. de Jong if he would be willing to continue to chair the working group during the next biennium, and Mr. de Jong agreed.*

**2016/58 + INF.12 + INF.32 (Belgium, Japan); INF.15 (Secretariat); INF.35 (EIGA) – Classification criteria for flammable gases** - Belgium presented the proposal in 2016/58 (and track changes version in INF.12), noting that it proposed only changes to GHS requirements and no changes to transport requirements. The GHS Secretary proposed editorial corrections as presented in INF.15, and the Sub-Committee supported these. INF.32 presented options regarding note b in the proposal; the Sub-Committee supported Option 1 to have no note b. *The TDG Sub-Committee’s recommendations will be forwarded to the GHS Sub-Committee.* In EIGA’s absence, the GHS Secretary introduced INF.35; the Chair noted that this pertained to GHS text, nevertheless several participants expressed support to correct the error in the example calculation as described in Proposal 2.

**2016/62 (Germany) – Corrections to the classification of flammable liquids** - Germany noted that the proposed amendments primarily addressed GHS text. The U.S. noted that Annex II seemed to include only editorial changes to the Manual of Test and Criteria, and there seemed to be no concerns. However, the U.S. and several participants requested additional time to consider possible downstream consequences and unintentional changes to classification criteria particularly in Annex I. *The TDG Sub-Committee’s comments will be forwarded to the GHS Sub-Committee.*

**INF.8 (Secretariat) – Application for consultative status from Medical Devices Battery Transport Council (MDBTC)** - MDBTC provided information regarding their organisation and their application for consultative status. Some concern was expressed regarding the organisation’s narrow scope; there are many sectors using lithium batteries, and there was discussion regarding how the Sub-Committee should consider which organisations’ scopes to be relevant to the work of the Sub-Committee. Several Sub-Committee members expressed that they were not opposed to MDBTC having consultative status and that it could be useful to have MDBTC’s expertise and data, noting challenges in the past in addressing medical-related issues. *The Sub-Committee approved MDBTC’s application by a vote of 7 to 4.*



**INF.58 (PRBA, RECHARGE) – Lithium battery T2 thermal test** - PRBA presented the revised proposal in INF.58, responding to comments on 2016/81. Germany supported the approach, but a number of participants expressed concerns, including that the test temperature had already previously been decreased, the issue did not seem to be a widespread problem, no technical justification had been provided for specifying a temperature of 65°C, and procedural clarifications were needed. *PRBA withdrew the proposal, indicating that they may return to the issue during the next biennium.*

**INF.61 (USA) – Lithium battery test report** - The U.S. presented a revised proposal, responding to comments on 2016/74 and 2016/75, as agreed by an informal group that met during lunchtime on Day 5. The general sentiment was that the revised proposal was an improvement, and although further clarifications could be made, it was important to adopt provisions during this biennium. There was discussion regarding whether “upon request” should be added after “shall make available” in the new 2.9.4(f), but it was decided to leave it as is (i.e. without “upon request”). It was agreed to add “address” in (b) and (c) of the test summary. It was agreed to change (f)(iv) in the test summary from “cell/battery geometry” to “physical description of cell/battery”. It was agreed to delete “vi. design types” from (f) in the test summary. DGTA and PRBA asked for clarification regarding “subsequent distributors” in 2.9.4(f), but it was noted that this was based on existing text in 6.1.1.5. *The Sub-Committee adopted the proposal as amended.*

**INF.48 (Germany) – Editorial correction to 3.3.1** - Germany noted that this proposal was purely editorial. Sweden reminded the Sub-Committee of the amended mark in INF.55 that was previously agreed. Germany suggested correcting the mark example in the introductory text in 3.3.1 to “LITHIUM BATTERIES FOR DISPOSAL”, per special provision 377. *The Sub-Committee agreed to this change.*

**INF.52 (PRBA) – Damaged and defective lithium batteries** - *The Chair noted that PRBA had withdrawn INF.52.*

**INF.21 (Secretariat) – Draft resolution of Economic and Social Council** - The Secretary presented INF.21, noting that section A was applicable to work of this Sub-Committee. The Secretary also noted work regarding information available on the UN website.

**INF.46 (Secretariat) – Outcome of evaluation** - The Secretary presented INF.46 regarding the consultant’s recommendations or suggestion, however, noting that any items regarding the programme of work should actually be proposed by delegations to the Sub-Committee, not just to the consultant. Nevertheless, the Secretary drew the Sub-Committee’s attention to the consultant’s conclusions regarding dangerous goods in mail, customs tariffs, development of guidance for implementation, and guiding principles.

## **End of Day 6**

## **Day 7 – December 6, 2016**

**2016/73 (France) – Test and criteria for oxidizing liquids (Test O.2) and oxidizing solids (Test O.3)** - France presented five proposals regarding amendments to Tests O.2 and O.3 in the Manual of Tests and Criteria, adding that in Proposals 2 and 3, the word “approximately” should be inserted between “apparent density” and “170 kg/m<sup>3</sup>”. Delegations were thankful for the round-robin testing (RRT) programme led by France and generally supportive of the proposals. The insertion of “approximately” was questioned, and France explained that the cellulose manufacturer included the word in its specifications due to small variations in density; the Sub-Committee decided that these amendments were needed urgently, and if necessary, this issue could be clarified in the future with the continuation of the RRT per Proposal 5. Germany and CEFIC were concerned that a specific cellulose was intended to be used, but it was not named because it was trademarked; however, the Secretary noted that in principle commercial names should not be used in the Recommendations, and other delegations stated that they were satisfied with the manner in which the cellulose was specified in the proposals. The U.S. enquired why the upper pH value was 7.5 in Proposal 1 and the upper pH value was 7 in Proposals 2 and 3, and France explained

that it was due to Proposal 1 including two products, while Proposals 2 and 3 included one product. The U.S. suggested noting in the report of this session that the intention was that re-testing would not be necessary due to these amendments. *The Sub-Committee approved the proposed amendments in Proposals 1 to 4, as well as the inclusion of follow-up work per Proposal 5 in the programme of work for the next biennium. The GHS Sub-Committee will be informed that the TDG Sub-Committee approved these proposals.*

**INF.60/Rev. 1 (USA) – Development of a comprehensive risk-based system to classify lithium batteries and cells for transport** - The U.S. proposal to include this item on the programme of work for the next biennium was agreed by the Sub-Committee, with an amendment changing “risk” to “hazard”. The Chair encouraged data to be submitted for this work. The Chair asked the Vice Chair, Mr. Pfauvadel, if he would be willing to continue to chair the lithium battery working group during the next biennium, and the Vice Chair agreed. The Vice Chair stated that PRBA, RECHARGE, and COSTHA had provided administrative support for this working group in the past, and continuing assistance would be appreciated. *The next lithium battery working group meeting was tentatively scheduled for spring 2017, and ICAO offered to host the meeting.*

**Programme of work for biennium 2017-2018** - The Chair reminded the Sub-Committee of items already agreed during this session to be included in the programme of work for the next biennium. The Chair enquired if there were any other proposals for the programme of work for the next biennium. The secretary reminded the Sub-Committee of the consultant’s suggestions in INF.47; as mentioned the previous day, delegations should propose any items of interest to the Sub-Committee. DGTA noted that research had previously been done by the U.S. hazardous materials research programme regarding water-reactive materials that emit toxic gas; this was on the current programme of work, but no documents had been submitted. DGTA indicated that they would be willing to do so if the item was carried forward to the next biennium, and the U.S. supported keeping this item on the agenda. The Chair reviewed the items on the current programme of work, noting those that should be carried forward to the next biennium.

**INF.21 (Secretariat) – Draft resolution of the Economic and Social Council** - Having already presented INF.21 the previous day, the Secretary noted further that there were not enough changes to justify a new revised edition of Manual of Tests and Criteria, and so the Sub-Committee agreed to publishing amendments to the 6th revised edition as a booklet.

**Mr. John Monteith** - The COSTHA delegate informed the Sub-Committee that Mr. John (J.R.) Monteith, former expert from Canada, had passed away in September 2016 at the age of 88. He was the Vice Chair of the Sub-Committee from 1988 to 1996.

**Adoption of report** - The Sub-Committee reviewed and amended the draft report of this session, including adopted text, as prepared by the Secretariat. The Sub-Committee adopted the report, and the Secretariat will publish and post it on the UN [website](#) as ST/SG/AC.10/C.3/100.

**End of Day 7**