



Lithium Battery Webinar Q&A

General

Q: Are there really any data loggers using larger batteries. It seems that this should have been researched before establishing arbitrary limits.

A: Yes, there are some data loggers / cargo tracking devices that use lithium metal batteries with a lithium metal content in excess of 2 g. The decisions taken by the DGP to restrict the exception to lithium cells or batteries to those meeting Section II of PI 967 / 970 was based on the existing language in those packing instructions.

Q: How about 2.3 DGs carried by passenger? About spare batteries for mobility aids, ICAO and IATA have un-matching of Ni-MH batteries, while lithium batteries are harmonized.

A: Yes, unfortunately the ICAO Air Navigation Commission did not adopt the recommendation of the Dangerous Goods Panel to limit a passenger to two spare NiMH batteries for a mobility aid. The IATA member airlines did not believe that having no limit on the number of spare NiMH batteries was appropriate and adopted a limit of 2 spare batteries.

Q: How does IATA think about carrying re-called lithium batteries by passenger? ICAO published recommendation. Some countries (e.g. Japan) change from recommendation to national/regional regulation.

A: It depends on the reason for the recall. Not all recalls involving lithium batteries or equipment containing lithium batteries are done because the lithium batteries pose a safety hazard. There was the recall of the Samsung Galaxy Note 7, which was a safety hazard and all steps were taken to ensure that passengers were alerted that these were not to be carried on an aircraft. However, a more recent recall involving Apple MacBook Pro was more an issue that emerged with extended use, and the same safety hazards were not present. As such, it is believed that recalls for a safety reason should be managed through consumer protection agencies.

Q: I find it still very hard to ensure that equipment containing lithium batteries that are being transported for refurbishment (e.g. the laptops mentioned) still adhere to the UN 38.3 tests after they have been used. Any remarks/tips/best practices on this?

A: This is certainly a very big question. The transport of used lithium battery powered devices for the purposes of being refurbished or even of the transport of devices that have been refurbished raises many compliance questions. If the devices are used, how have the cells or batteries been treated, and will they still meet the standards demonstrated by the original types that were tested? If the devices now have refurbished batteries, how were they refurbished? Does the refurbished battery meet the standards for the original types that were tested? What about the lithium battery test summary; how valid is that now for the refurbished device/battery?

It is likely that this issue will be brought to the attention of the UN Subcommittee of Expert on the Transport of Dangerous Goods to propose that it be added to the work plan for the Subcommittee.



Q: Will the new sizes for the lithium battery mark will become mandatory in a couple of years or will the old labels still be allowed in the future?

A: The wording in the regulations is clear. The lithium battery mark can be a rectangle or a square with a minimum size of 100 mm x 100 mm. This means that the current mark of 120 mm x 110 mm can continue to be used indefinitely.

Dangerous Goods Training

Q: Will employers need to still provide training records. It is not clear how the new competency-based training requirements will be enforced.

A: Yes, the provisions in DGR 1.5 in the 62nd edition still require the employer to maintain training records. For competency-based training this will include "a description, copy or reference to training and assessment materials used to meet the training and assessment requirements." Enforcement of competency-based training and assessment will be determined by the civil aviation authorities.

Q: Regarding the employer being accountable for assessment of competence, how will subcontracting process work? i.e. Subcontractor shipping on companys' behalf?

A: The training of employees of a subcontractor should be part of any agreement entered into between the two parties, i.e. the company employing the subcontractor should specify the training requirements that must be applied. This should also be verified through audits of the subcontractor.

Q: Does IATA organizes any specific webinar to get further information about new DGR training methodology?

A: This has not been planned yet; however, further enriched guidance document on the implementation of competency-based training is under currently under development, activities specifically on this topic can be considered in the future.



Dangerous Goods Reporting

Q: Did IATA evaluate to extend the DGR Alert Occurrence System also for undeclared DG carried by passengers?

A: The carriage of dangerous goods not permitted by subsection 2.3 by passengers is not seen as a significant risk globally. Most dangerous goods in passenger baggage will be detected during automated screening of checked baggage or during the security screening of passengers and their carry-on baggage. Almost all of this screening is performed by entities contracted by the airport or the country and the airline may not be advised when these dangerous goods are identified and removed.

However, undeclared dangerous goods in cargo can amount to hundreds of kg in a single shipment, which can pose a very significant safety risk to an aircraft, passengers and/or crew.

Q: A significant risk lies with the deliberate circumnavigation of rules and regulations by shippers, be it for cost or convenience. That is a very different risk to those presented by awareness or training vulnerabilities. What are the panels thoughts on tackling that issue? Carriers blacklisting a particular shipper merely moves the issue to another carrier.

A: All dangerous goods incidents and occurrences are required to be reported by the operator to their civil aviation authority and the civil aviation authority in the State in which the dangerous goods incident or occurrences occurred. The authorities are expected to take appropriate action against the entities involved that fail to comply with the international and local regulations. Where the entities have knowingly offered dangerous goods not in compliance with the regulations, the authorities are expected to take relevant enforcement actions, such as criminal prosecution, against the entities.

Q: The shippers who are black listed by K & N - would it be a good idea to advise IATA & the operators to make everyone aware of the potential hazards of these shippers who will look to other forwarders who may not take the same actions.

A: The dangerous goods regulations have already set out some recommendations for entities other than operators to the CAA in the State, and it is expected that the State authorities will take the appropriate actions against the entities that do not comply with the regulations. Disclosing certain specific details may potentially breach certain contractual terms in some companies under some circumstances. Therefore, the process of data collection and sharing would require thorough legal review by individual operators.

Q: In addition to my previous question - one piece I'm not sure is currently being debated or supported is consequence of tendering non-compliant goods which in effect endanger an aircraft. As a collective, do we feel that enough is being done to seek out and effectively punish those responsible, to mitigate the risk of their essentially placing their goods with a different carrier next time?

A: The reporting requirements for dangerous goods incidents and occurrences are laid out in the international and local regulations. It is only the State authorities that are empowered to take legal actions or punishments against those who do not comply with the regulations.



Fire Containment Equipment and the Test Standards

Q: There is also still a lot of unclarity about fire containment equipment for preventing lithium battery fires in the warehousing environment. What is the right fire containment equipment according to you and /or is there a similar group working on fire containment equipment for warehousing?

A: At the moment, some customers are using fire containment equipment at the warehouse. Different entities are applying various fire containment equipment on the market for different purposes. The importance is to understand what needs to be achieved and through a thorough safety risk assessment to determine which type of equipment is suitable for the purpose.

Q: Was the smoke in the fire containment bag test of the lithium batteries toxic to any degree?

A: In the tests conducted by EASA at the SABATAIR research project, the toxicity of the gases released by the lithium ion cells was not evaluated.

Q: Why was it tested with batteries with batteries with a SOC of 50 % and 100 %? (halon presentation). Max allowance on aircrafts is 30 %

A: Although the Regulations only permit lithium ion cells and batteries (UN 3480) to be transported at a state of charge (SoC) not exceeding 30% of their rated capacity, the objective of the tests conducted was to evaluate how the introduction of a single change compared to the baseline test configuration could contribute to the reduction of severity of the cargo fire event. In order to generate sufficiently severe baseline cargo fire event, the cells used for the tests were either at 50% or 100% SoC. The selected values of the SoC contribute to creating more critical test conditions.

Q: Are you working with/testing other cell geometries? Pouch or Prismatic?

A: Part of the EASA's future project is to test different cell designs and types, other than the 18650 lithium ion cells.

Q: Which goods /lithium batteries would be carried in the fireproof containers / Fire containment covers, the declared or possibly undeclared? Is transport in these containers / Fire containment covers mandatory or recommended?

A: Different entities are acquiring various fire containment equipment for different purposes; some are using them for declared lithium battery shipments while some are using them for other shipments that may potentially contain undeclared lithium batteries, such as mail or e-commerce packages.

In November 2020, ICAO's newly introduced Chapter 15, Cargo Compartment Safety, under Annex 6 – *Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes*, will come into effect. In which, the containment characteristics of unit load device must be included in the safety risk assessment, and corresponding to this requirement, ICAO has developed the Guidance for Safe Operations Involving Cargo Compartments, where fire resistant containers and fire containment covers are mentioned as a kind of unit load device to be used but emphasised that even when these products are used, the type and properties should be carefully considered in accordance with the specific items to be transported.

Q: The MPS for smoke detection for the FRC/FCC would need to be written in a way that can be tested on the ground - not something specific to each aircraft configuration

A: EASA intends to make an effort to determine if it is possible to improve the current MPS to address impact on performance of aircraft fire protection systems. Any standard that is going to be developed



as part of this effort will involve conducting testing at equipment level and on the ground. While the availability of an aircraft is not going to be required to run the tests, the test set-up may involve the need to replicate or simulate to an acceptable extent certain features that are typical of the design of cargo compartments of large aeroplanes.

Q: Does FCC or AmSafe solution protect in case of combustion big quantities of LB? for example shipment with Li-ion batteries, net weight is 5000 kg. This is equal 125 000 li-ion 18650 batteries.

A: Currently, there is no evidence that FCC or FRC can contain any kind of lithium battery fires; every test was completed with a certain number of certain cell type at a certain state of charge. As for possible combustion, the major challenge even with the lithium battery fire tests that were conducted is that whether or not the smoke and gases released could create an explosion in a confined and airtight condition can yet to be evaluated.

Q: How long after AS8992 is published from SAE will EASA adopt and refer to it in ETSO C90e?

A: EASA updates CS-ETSO on a yearly basis. The NPA is usually published in Q1 and the final rule in Q4 of each year. Depending on when the SAE will release the AS, it may take one to two years to update the ETSO.

Safety Risk Assessment

Q: Why aren't postal operators stepping in and do the extra mile to ensure no lithium battery is in the mail with better automated screening technologies?

A: The UPU member countries and their postal operators are bound by the UPU Convention which is very clear on the security requirements (Article 8) and carriage of prohibited goods (Article 19) along with the required training for all postal operators in these matters which is in compliance with ICAO regulations.

It is important to remember that postal operators are bound by many different national regulations or business requirements depending on where they are located in the world. There are 192 member countries with disparate systems. Postal operators are also constrained by their financial situation, which is very different for each of our 192 member countries.

Q: Have the airlines begun to develop safety risk assessments to comply with ICAO Annex 6 provisions coming into effect in Nov?

A: Many operators have been conducting safety risk assessments for the transport of cargo/mail including dangerous goods for many years. Operators will find the requirements of the new Chapter 15 of Annex 6 very challenging to comply with as the requirement is to now conduct a specific risk assessment on the transport of "items" in the cargo compartment. ICAO had previously advised that a guidance document will be provided to operators; however, this document has still not been made available by ICAO to date.

Some operators have started to engage with their civil aviation authorities for fulfilling the requirements in Chapter 15; yet, Annex 6 is overseen by the flight operations department of the authorities instead of their dangerous goods department. Some operators are still waiting for the direction from the flight operations department of the regulators to determine the appropriate way to proceed.



Q: How does training figure in to the management of risk, especially considering the current environment with outsourcing of various handling activities in the industry? Would it be to the operator to verify the prior steps in the supply chain as per the changes in the Annex 6?

A: Training is indeed becoming one of the key mitigation strategies in risk management. It is critical that operators work closely with their contracted ground service providers to ensure they are aware and can implement the risk mitigation measures being put forward by the operators.

Given that the new Chapter 15 of Annex 6 puts all responsibilities on the operator, which will be impossible for an operator to achieve. As an operator, it is believed that the States are responsible for appropriate surveillance, oversight, and when applicable, enforcement action on the entities in the supply chain, that do not conduct business in accordance with international rules, regulations and applicable laws.

Q: I work with Federal Airports Authority of Nigeria, Aviation Security department....we resemble for screening passengers, baggage and cargo before going on board the aircraft. fire containment should not be discussed in isolation, we should also think of ways to prevent such items like lithium ion batteries that can cause fire from getting on board the plane in the first place. This calls for uniformity on the part of carriers, airline A and B differs in terms of DGR regulations. What is IATA and the Airlines doing to make sure the rules are universal and applicable to all?

A: Some lithium ion batteries can potentially go into thermal runaway and consequentially cause a fire under certain circumstances, including but not limited to counterfeit batteries that did not pass the UN 38.3 test or rough handling. Therefore, similar to other dangerous goods, it is not simply prohibiting all of them from air transport.

With no doubt, airlines should align with the industry standards and regulations as much as possible. However, airlines have to conduct their own safety risk assessments, and based on this result together with their operational needs / constraints, it is inevitable to have differences among airlines.