



ICAO

**ELEVENTH MEETING OF THE REGIONAL AVIATION SAFETY GROUP -  
ASIA AND PACIFIC REGIONS (RASG-APAC/11)**

*(Video Teleconference, 25-26 November 2021 at 10:00-13:00 hrs.  
Bangkok Time, UTC+7)*

**Agenda Item 4: ICAO / Member State / Industry Presentations**

**RECOMMENDATIONS TO FURTHER ENHANCE SAFETY  
IN THE TRANSPORT OF LITHIUM BATTERIES CONTAINED IN EQUIPMENT**

*(Presented by Hong Kong, China)*

**SUMMARY**

The COVID pandemic has induced a significant growth in online shopping and e-commerce. With the growing use of lithium batteries to power various electronic devices, the global logistics industry has continued to maintain vigilance and make targeted efforts in recent years to enhance safety in the transport of lithium batteries by sea, land and air. Despite that, there were odd reports from global news about fire occurrences involving electronic devices and air cargo containing lithium batteries. Over the years, the global air cargo community has also discussed and put in place various measures to further enhance safety in the transport of lithium batteries. This paper highlights the global issue of the potential hazard of transporting lithium batteries and calls for joint efforts from ICAO members to consider safety enhancement measures in addition to the existing requirements as given in the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air. Such safety enhancement measures may also be adopted by sea and land transport as appropriate.

**1. INTRODUCTION**

1.1 With the growing use of lithium batteries to power various electronic devices, the global logistics industry has continued to maintain vigilance and make targeted efforts in recent years to enhance safety in the transport of lithium batteries by sea, land and air. Despite that, there were odd reports from global news about fire occurrences involving electronic devices and air cargo containing lithium batteries.

1.2 These occurrences revealed a global issue of the potential hazard of transporting lithium batteries in all modes of transport and around the world. Over the years, the global air cargo community has discussed and put in place various measures to further enhance safety in the transport of lithium batteries. For example, the lithium batteries must be of the type proved to meet the requirements of UN 38.3 tests, they must be equipped with an effective means of preventing external short circuits and manufactured under a quality management programme, etc. as stipulated in the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (TIs).

## 2. DISCUSSION

2.1 Hong Kong, China is committed to upholding aviation safety and takes every occurrence seriously. On 11 April 2021 an incident occurred at the apron of Hong Kong International Airport whereby a skid of air cargo had started a fire. Notwithstanding that the occurrence happened on ground and the fire was promptly put out by the airport fire services, the Civil Aviation Department of Hong Kong (HKCAD) conducted a thorough investigation into the event. This included review of CCTV footages of the freight forwarder's warehouse, cargo terminal and ramp, interviews with the personnel involved in the processing and handling of the cargo concerned, verification of the authenticity of UN 38.3 test reports with the issuing organizations, examination of the packages from the same consignment that remained intact, etc. The investigation concluded that there was no indication of non-compliance with the requirements of the ICAO TIs by relevant entities in relation to the air cargo documentation, packing and marking of the skid of air cargo concerned which comprised lithium ion batteries contained in equipment.

2.2 Although compliance with the TIs had been concluded, as an initiative to further enhance safety of air transport of lithium battery products, the HKCAD had proactively explored possible safety enhancement measures and endeavoured to formulate the way forward on the transport of such items in collaboration with the local air cargo industry. These possible measures included using strong rigid materials for overpack containing UN3481 or UN3091 lithium ion or metal batteries contained in equipment in compliance with Section II of Packing Instructions (PI) 967 or 970 of the TIs and securing those packages within the overpack, applying fire containment bags / covers and fire resistant containers for lithium battery shipments, and imposing a state of charge (SoC) limit to UN3481 lithium ion batteries packed with / contained in equipment, etc.

2.3 Based on the feedback gathered from rounds of discussion between the HKCAD and the local air cargo industry, a general consensus was reached among stakeholders that using strong rigid packaging materials for overpack on packages of lithium ion or metal batteries contained in equipment in compliance with Section II of PI 967 or PI 970 of the TIs is a recommended practice that will achieve immediate safety enhancement in transporting such goods without introducing significant costs or procedural challenges. In other words, nylon bags which are common packaging materials for overpacks of e-commerce shipments should not be considered strong rigid if they contain packages of Section II of PI 967 or PI 970. Besides, these packages should be secured within the overpack. In this connection, the HKCAD issued a Dangerous Goods Advisory Circular in August 2021 to promulgate this recommendation.

2.4 With Hong Kong's full implementation of the ICAO policy direction on 100% export air cargo security screening from July 2021, the x-ray screening may now serve as an additional tool to detect the presence of any undeclared lithium batteries in air cargo. We will continue to work together with the stakeholders and keep in view additional safety enhancement measures available to ensure the safe transport of lithium batteries by air.

2.5 With a significant growth in online shopping and e-commerce, the potential hazard of transporting lithium batteries has become a global issue. Since similar occurrence could happen in other modes of transport and around the world, it is important to draw joint efforts from ICAO members to consider safety enhancement measures in addition to the existing requirements in the TIs. In light of the seriousness of this subject, Hong Kong, China has also shared our experiences with the ICAO Dangerous Goods Panel at its 28<sup>th</sup> meeting.

**3. ACTION BY THE MEETING**

3.1 The Meeting is invited to:

- a) note the information contained in this Paper;
- b) recognize the global issue of the potential hazard of transporting lithium batteries in all modes of transport and around the world, and the efforts made by the global logistics industry to further enhance safety in the transport of lithium batteries by sea, land and air; and
- c) share experience, challenges, and considerations among ICAO members, and jointly explore additional safety enhancement measures to further enhance safety in the transport of lithium batteries.

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