DANGEROUS GOODS PANEL (DGP)

TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

Agenda Item 5: Development of a comprehensive strategy to mitigate risks associated with the transport of lithium batteries including development of performance-based packaging standards and efforts to facilitate compliance

ACTIVE BAGGAGE TAGS FITTED WITH LITHIUM BATTERIES

(Presented by PRBA – The Rechargeable Battery Association)

SUMMARY

This information paper addresses DGP/25-WP/31 and lithium batteries currently used in active baggage tags.

1.   **INTRODUCTION**

1.1   Active baggage tags fitted with lithium cells and batteries are beginning to be used by a number of airlines, and questions have been raised regarding the limits on the size of cells and batteries that can be used in the tags and what dangerous goods regulations apply to these devices. Pictures of these baggage tags are provided below and an article explaining how they are intended to work is shown in the appendix to this information paper.

1.2   The lithium cell and batteries inside the baggage tag are designed to be non-removable, (*i.e.,* permanently installed). Most baggage tags are intended to be secured to the outside of the baggage as shown above rather than placed inside the baggage. Therefore, the tags could be subject to numerous

shocks and impacts during transport and handling that are quite different than the shocks and impacts packages of lithium cells and batteries encounter during transport.

1.3   Several PRBA members manufacture lithium metal cells and batteries for use in baggage tags. Lithium metal button cells and batteries are currently the overwhelmingly preferred battery technology and form factor used in baggage tags, for two reasons. First, lithium metal cells and batteries have a very low discharge rate and can provide a reliable, long-term source of energy for the tags. Second, as test data have shown, button cell designs and form factors provide a unique level of safety. The low energy, limited lithium metal content and unique design and form factor all contribute to a cell and battery that is very abuse tolerant.

1.4   IATA has proposed in DGP/25-WP/31 a lithium content limit of 0.3 grams of lithium metal for lithium metal batteries used in baggage tags. PRBA is aware of at least one lithium metal battery design that will soon be placed on the market that consists of six small button cells with an aggregate lithium metal content of 0.42 grams (0.07 X 6 = 0.42).

1.5   We are not aware of lithium ion cells and batteries being used in baggage tags although that certainly is a distinct possibility in the future. Therefore, any regulations being considered by the DGP should also include limits for small lithium ion cells and batteries. The 2.7 Wh limit proposed in DGP/25-WP/31 provides a reasonable limit but should apply to cells and batteries.

2.   **DISCUSSION:**

2.1   The DGP is invited to consider the following limits for lithium ion and lithium metal cells and batteries used in active baggage tags:

       a)   For lithium metal cells and batteries, cells must not exceed 0.3 grams of lithium metal and batteries must not exceed 1.0 gram of lithium metal;

       b)   Lithium ion cells and batteries must not exceed a Watt-hour rating of 2.7 Wh.

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APPENDIX

THE NEXT FRONTIER IN AIRLINE BAGGAGE: DIGITAL BAG TAGS

THE WALL STREET JOURNAL.

BUSINESS

The Next Frontier in Airline Baggage: Digital Bag Tags

Self-service kiosks and state-of-the-art trackers are coming to speed up airport baggage queues

By **JACK NICAS** and **TARUN SHUKLA**
July 1, 2015 2:10 p.m. ET

For decades, fliers have checked their bags the same way: hand them to an airline employee and trust that they will reappear at the destination.

Now big changes to that model are coming as airlines look to streamline the airport experience—and pass more work to customers and machines.
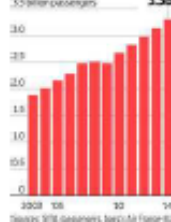
Their latest ideas include letting fliers tag their own bags, print luggage tags at home and track their bags on smartphones. Later this year, some fliers in Europe likely will begin using what could be the future of flying luggage: permanent bag tags that digitally update if flight plans change. Improved technology and loosened security rules are accelerating changes to baggage handling.
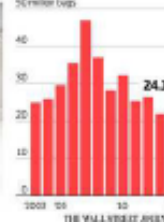
"It's a bit of a baggage revolution," said Ryan Ghee, editor of the Future Travel Experience, a website on advances in commercial flying. "Normally you have one [change in] development, but it's all going on at once."

The changes face hurdles, including opposition from unions, security rules and fliers who prefer a human touch.

On a recent weekday at Chicago's O'Hare International Airport, several fliers struggled to tag their bag and summoned airline employees for help.

Still, carriers are plowing ahead. More than a third of global airlines now ask fliers to tag their own bags, compared with 13% in 2009, according to SITA, an airline-technology firm. By 2018, more than three-quarters of carriers intend to offer the service.

"I don't work for the airline. Why should I do their job?" said Mark Sam Rosenthal, a television writer from New York who prefers to check bags with ticket agents. "If something goes wrong or I have a question, the self-tagging machine isn't going to have an answer," he said.

Charlie Leocha, head of the flier-advocacy group Travelers United, predicted the new technology will shorten airport lines, but also warned it would eventually replace airline workers, frustrating fliers when storms or other disruptions hit. Airline unions generally oppose the new technology for the same reasons.

Airlines say such technology isn't intended to reduce staff, but instead free workers to handle customer problems.

RELATED NEWS	From 2004 to 2014, a
• JetBlue Sets New Fare Classes, Bag Fees (http://www.wsj.com/articles/jetblue-sets-new-fare-classes-bag-fees-1435675856)	
• What Are the Odds Your Carry-On Won't Fit? (http://www.wsj.com/articles/what-are-the-odds-your-carry-on-wont-fit-1435167020)	

period in which airlines added many self-service technologies like kiosks, the number of U.S. ticket agents fell about 13.5% to roughly 138,000, according to federal estimates. U.S. airline passengers increased 8.6% to 761 million over that period.

The biggest of the coming changes is permanent bag tags, electronic devices that strap on to frequent fliers' luggage and digitally display their flight information. The tags display bar codes like a traditional tag, allowing them to work with existing infrastructure. Fliers update the tags via Bluetooth from their smartphones, and the airline can also remotely update the tag if its owner gets rerouted.

Air France-KLM SA aims to release a permanent tag later this year, and Brussels Airlines says it's also working on one. Only Qantas Airways Ltd. of Australia now uses

> *'Home-printed and electronic bag tags are the low-hanging fruit for U.S. airlines.'*

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one. Two independent companies also plan to launch permanent tags this year and say they are nearing deals with airline partners.

Air France KLM is also releasing a bag tracker that goes inside luggage. The device uses satellite data to give travelers the bag's location and light sensors to alert them if the bag is opened en route. The carrier said advances in mobile technology allowed it to release the tag and bag tracker after years of development.

Officials expect similar technology to soon arrive in the U.S. "Home-printed and electronic bag tags are the low-hanging fruit for U.S. airlines," said Stephanie Taylor, manager of passenger services at Airlines for America, the largest U.S. airline trade group. "We're expecting multiple carriers to adopt these solutions by the end of the year."

Michel Pozas Lucic, Air France–KLM's vice president of customer innovation, said alliance partner Delta Air Lines Inc. helped develop and test its permanent tag. "We expect them...to be interested" in adopting the technology, he said, adding that other airlines are in talks to use the devices, too. "We don't see a lot of reasons why it wouldn't take off."

Delta declined to comment.

> *'The customer may not need paper [tags] at all.'*

Simpler bag-handling changes are becoming pervasive. It is now common for travelers to tag their own bags in Europe, and it is catching on in places like China, Africa and the Middle East. Kempegowda International Airport in Bangalore, India, also known as Bengaluru, said it plans to deploy the country's first self-tagging kiosks in July. About a quarter of global fliers now regularly tag their own baggage, according to a recent SITA survey.

The Transportation Security Administration late last year changed its policy to make it simpler for U.S. airlines to offer self-tagging. American Airlines Group Inc., United Continental Holdings Inc. and Alaska Air Group Inc. are adding self-tagging kiosks across the country.

In April, Alaska Air started enabling home-printed bag tags—which fliers fold and slip into plastic cases the airline provides—following foreign carriers including Air France-KLM, Deutsche Lufthansa AG, and Qatar Airways. Alaska offers 1,000 frequent-flier miles to customers who use it. Curtis Kopf, vice president of innovation, said Alaska Air is now looking toward permanent tags. "The customer may not need paper at all," he said.

In Europe and elsewhere, carriers use fully automated machines to accept passenger-tagged bags, meaning travelers don't have to interact with airline employees. ICM Airport Technics, which has installed its automated bag-drop machines in airports in London and Australia, said the typical transaction takes between 15 seconds and 45 seconds.

In the U.S., airlines still must staff bag-drop stations because security rules require employees to check identifications of passengers checking bags.

Airlines for America said it is lobbying the TSA to allow a biometric identification check such as facial-recognition software or fingerprint readers, to remove humans from the process. The TSA said it "does not currently envision changes to bag security requirements."

Airlines also are moving to improve bag tracking ahead of a June 2018 deadline set by industry groups to install such technology. Tracking should help reduce the rate of mishandled bags world-wide, though airlines in 2014 lost 7.3 bags per 1,000 fliers, compared with 13.2 bags in 2003.

As airlines better track bags, they're passing that information to fliers. A tenth of airlines, including Delta, let fliers track their bags in real time, according to SITA. By 2017, two-thirds of carriers intend to offer the service.

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