Organización de Aviación Civil Internacional

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NOTA DE ESTUDIO

GRUPO DE EXPERTOS SOBRE MERCANCÍAS PELIGROSAS (DGP)

VIGESIMOSEXTA REUNIÓN

Montreal, 16 - 27 de octubre de 2017

Cuestión 2 del orden del día: **Formulación de recomendaciones sobre las enmiendas de las *Instrucciones Técnicas para el transporte sin riesgos de mercancías peligrosas por vía aérea* (Doc 9284) que haya que incorporar en la edición de 2019-2020**

ACTIVACIÓN ACCIDENTAL DE LOS CIGARRILLOS ELECTRÓNICOS TRANSPORTADOS POR LOS PASAJEROS Y LA TRIPULACIÓN

(Nota presentada por A. Stubblefield)

RESUMEN

En esta nota de estudio se propone enmendar la lista de mercancías peligrosas que se permite transportar a los pasajeros y a la tripulación (Tabla 8-1), con el propósito de atender las preocupaciones de seguridad operacional respecto a la activación accidental de aparatos electrónicos portátiles para fumadores (p. ej., cigarrillos electrónicos) en el equipaje de mano.

Medidas propuestas al DGP: Se invita al DGP a considerar las enmiendas que se proponen de la Tabla 8-1 que figura en el Apéndice A a esta nota de estudio.

1. INTRODUCTION

1.1 Specific provisions were added into the ICAO Technical Instructions, Part 8, Table 8-1, for portable electronic smoking devices (e-cigarettes) through the issuance of Addendum No. 1 to the 2015-2016 ICAO Technical Instructions (26-May-2015). The provisions added were the prohibition of e-cigarettes in checked baggage, spare batteries must be protected from short circuits, and the recharging of the device and batteries is not permitted on board the aircraft.

1.2 In the United States. There have been ten documented heat/smoke/fire incidents involving e-cigarettes since the introduction of these provisions in Table 8-1 (i.e. during the period May 2015 through May 2017). Seven of those incidents occurred inside a passenger plane and three occurred

* Sólo se han traducido el resumen y el Apéndice A.

inside the airport.[1] These incidents typically involved the e-cigarette device while it was being transported in carry-on baggage (See Appendix B for incidents). While the specific cause of each of these incidents is unknown, a concern in all these incidents is the accidental activation of the e-cigarette device. When these e-cigarette devices are activated, the power from the battery is allowed to energize a heating coil. This heating coil is only designed to be turned on for a few seconds while it is submerged or surrounded by e-cigarette liquid (E-liquid, E-juice, etc.). If the heating coil is energized for longer than a few seconds, all the e-cigarette liquid is vaporized, and the entire e-cigarette device starts to overheat, smoke, and potentially catch on fire. This heat is also transferred to the battery, which are mostly lithium ion batteries, with the potential to drive the lithium ion battery into thermal runaway.

1.3 The proposal introduces a provision in the e-cigarette entry in Table 8-1 that requires passengers or crew to take effective measures for preventing accidental activation of the heating element of the e-cigarette device when transporting such devices in carry-on baggage on-board passenger aircraft. Examples of effective measures include, but are not limited to, removing the battery from the e-cigarette; separating the battery from the heating coil; placing the e-cigarette into a protective case; using a protective cover, safety latch, or locking device on the e-cigarette's heating coil activation button; and electronics or technology in the device designed to prevent accidental activation such as requiring the e-cigarette to be powered on before the heating coil button can be activated. In most e-cigarettes, the battery can either be easily removed or easily separated from the heating element.

2. ACTION BY THE DGP

2.1 The DGP is invited to consider the amendment of the provisions for dangerous goods carried by passengers or crew as shown in Appendix A to this working paper.

[1] The three incidents that occurred inside the airport may be relevant to the safety risk of lack of effective measures to prevent accidental activation of an e-cigarette's heating element inside a passenger aircraft because the passengers in possession of such devices were either imminently going to be boarding a passenger aircraft or had just departed one. These incidents are considered near-misses because they could have occurred on-board the aircraft.

APÉNDICE A

PROPUESTA DE ENMIENDA DE LA PARTE 8 DE LAS INSTRUCCIONES TÉCNICAS

Parte 8

DISPOSICIONES RELATIVAS A LOS PASAJEROS Y A LA TRIPULACIÓN

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Tabla 8-1. Disposiciones relativas a mercancías peligrosas transportadas por los pasajeros o la tripulación

Artículos u objetos	*Ubicación*			*Se requiere aprobación del explotador*	*Se debe informar al piloto al mando*	*Restricciones*
	Equipaje facturado	*Equipaje de mano*	*En la persona*			
Artículos de consumo						
. . .						
19) Aparatos electrónicos portátiles para fumadores, accionados por batería (como cigarrillos/cigarros electrónicos, pipas electrónicas, vaporizadores personales, sistemas electrónicos de administración de nicotina)	No	Sí	Sí	No	No	a) transportados para uso personal de los pasajeros o la tripulación; b) las baterías de repuesto deben ir individualmente protegidas para evitar cortocircuitos (colocándolas en su embalaje original de venta al detalle o aislando de otro modo los bornes, p. ej., cubriendo con cinta adhesiva los bornes expuestos o colocando cada batería en una bolsa plástica o funda protectora); c) ninguna batería debe sobrepasar lo siguiente: — para las baterías de metal litio, un contenido de 2 gramos de litio; o — para las baterías de ión litio, una capacidad nominal de 100 Wh; d) las baterías de litio deben ser de un tipo que satisfaga las condiciones de cada una de las pruebas del *Manual de Pruebas y Criterios* de las Naciones Unidas, Parte III, subsección 38.3; ~~y~~ e) no está permitido recargar los aparatos ni las pilas a bordo de la aeronave~~.~~ ; y f) los aparatos deben poseer mecanismos eficaces que impidan la activación accidental del elemento calefactor cuando se encuentren a bordo de las aeronaves.
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APPENDIX B

E-CIGARETTE DEVICE SMOKE/HEAT/FIRE EVENTS

(Specific to Carry-On Baggage Since May 25, 2015)

Date	Source	Type of Battery	Device (if applicable)	Carrier	Aircraft Type (Passenger or Cargo)	Incident Summary
5/14/2017	Airport Authority	Li-ion	E-cig	N/A	N/A	Information, including video footage, from the Seattle Airport Authority and witness statements show an individual's e-cig exploding, resulting in burning of his shirt and backpack.
4/19/2017	Carrier	Li-ion	E-cig	Southwest	Passenger	Passenger on Southwest flight number 4639 from Columbus, OH to Chicago, IL (MDW) reported to a flight attendant that there was smoke coming from her purse. Passenger was carrying an e-cigarette/vaping device. The flight attendant put the e-cigarette/vaping device and two spare lithium ion batteries into a fire safe bag to extinguish the smoke.
4/9/2017	Media	Li-ion	E-cig	N/A	N/A	A passenger was at Hudson News convenience store, near gate "D" in LAS airport prior to boarding a flight. Left front pocket exploded and fire erupted. Passenger was burned and hospitalized with burns to his left thigh and left hand.
12/15/2016	Carrier	Lithium -ion	E-cig	American Airlines	Passenger	American Airlines flight 1129, which was en route from Dallas-Fort Worth, TX to Indianapolis IN, diverted to Little Rock, AR, after a passenger observed that his e-cigarette had overheated and was emitting smoke. The cabin crew used fire extinguishers to extinguish the e-cigarette.
10/30/2016	Carrier/SPOT Report	Lithium -ion	E-cig	Alaska	Passenger	At Ketchikan, AK (KTN) airport, during boarding of Alaska Airlines flight 67, a passenger's backpack containing an e-cigarette caught fire. The passenger dumped contents on the floor and crew used fire extinguishers to put out the fire. No injuries reported. Scorch marks to carpet of the aircraft were the result of the fire.
9/7/2016	Airport Operations	Lithium -ion	E-cig	N/A	N/A	As a passenger was entering the baggage claim area of DAL airport an e-cig in her purse exploded and burned the purse, some of its contents and charred her shirt. Witnesses stated there were small projectiles, which were on fire exiting her purse. They were extinguished by people standing at the baggage claim area waiting for their bags.

Date	Source	Type of Battery	Device (if applicable)	Carrier	Aircraft Type (Passenger or Cargo)	Incident Summary
6/14/2016	Carrier	Lithium -ion	E-cig	Spirit	Passenger	During boarding a passenger was carrying a backpack when another passenger noticed the fire. The plane was offloaded immediately. The DEN Fire Department responded, extinguished the fire and determined the e-cigarette in the carry-on bag (backpack) was the cause. The aircraft was cleared, cleaned and put back in service. The passenger chose to take the remains of the backpack with him.
6/10/2016	Carrier	Lithium -ion	E-cig	Spirit	Passenger	Flt 765 from San Jose Costa Rica to Fort Lauderdale, e-cig began to smoke in a passenger's backpack on seat. Fire extinguished with a fire extinguisher and then the e-cig was submerged in water. Flight continued and landed in FLL without further issues.
3/16/2016	Carrier	Lithium -ion	E-cig	Delta	Passenger	DL flt 689- E-cig in passenger's carry-on caught fire during boarding process. Fire extinguished by flt attendant
6/17/2015	Carrier	Lithium -ion	E-cig	Southwest Airlines	Passenger	During a Southwest flight from LAS-ALB a passenger stated he felt the e-cigarette in his pants pocket pop and he leg began to burn. When he removed the e-cig from his pocket he saw the battery shoot out of the device. The e-cig was cracked and smoking. The crew submerged the battery and device in water. The passenger had minor burns on his leg but refused medical attention upon arrival in ALB.

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