



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/17)**

Montreal, 24 to 28 April 2017

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)* for incorporation in the 2019-2020 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

LASER PLASMA LIGHTERS

(Presented by B. Firkins)

SUMMARY

This working paper identifies concerns with lithium battery-powered cigarette lighters, and proposes the addition of restrictions and prohibitions against such lighters to Item 15) (Small cigarette lighter) in Table 8-1.

Action by the DGP-WG: The DGP-WG is invited to consider adding in an entry for battery-powered lighters into the Consumer articles Section, Item 15) of Table 8-1 — Provisions for Dangerous Goods Carried by Passengers or Crew as shown in the appendix to this working paper.

1. INTRODUCTION

1.1 Laser plasma lighters are powered by a small lithium ion or metal battery, often rechargeable by a USB or cable port. As another emerging trend in electronic technology, they may (or may not) have a protective cap and may have a single or two-step means of activation. Similar to other emerging electrical gadgets, it is another area which is relatively unregulated and unsupervised in many States around the world.

1.2 Laser plasma lighters are also marketed as tesla coil lighters, flux lighters, arc lighters and double arc lighters.

1.3 Some examples of these lighters are:



1.4 Ordinarily these devices should be treated as portable electronic devices (PEDs); however, the experience with emerging and unregulated devices is that establishing compliance with UN 38.3 is near impossible. The DGP has experience with emerging devices and is well aware of the need to provide swift and effective advice to States, operators and passengers; especially if threats to passenger and aircraft safety are to be mitigated.

1.5 In considering appropriate existing entries in the Technical Instructions for these devices, there were two that seemed most likely. Naturally, there is a degree of correlation with cigarette lighters and the other entry considered for this type of device was battery powered portable electronic smoking devices.

1.6 The risk treatment restrictions which were developed and applied in respect of e-cigarettes would be equally applicable to these lighters; however, the entry is constructed around the smoking device itself. Operator's employees and passengers, when trying to determine whether or not the device is prohibited, will draw their reference from the purpose of device. That is, their point of reference will be "lighters", rather than "smoking devices".

1.7 The appendix to this working paper contains proposed amendments which consider this emerging technology and proposes certain restrictions to maintain aviation safety.

1.8 Early adoption of any change, or advance prior notification of such changes, should be effective in shaping manufacturer's designs of these devices to include one or more safety measures.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider adding in an entry for battery-powered lighters into the Consumer articles section, Item 15) of Table 8-1 — Provisions for Dangerous Goods Carried by Passengers or Crew as shown in the appendix to this working paper.

APPENDIX

PROPOSED AMENDMENT TO PART 8 OF THE TECHNICAL INSTRUCTIONS

Part 8

PROVISIONS CONCERNING
PASSENGERS AND CREW

Chapter 1

PROVISIONS FOR DANGEROUS GOODS
CARRIED BY PASSENGERS OR CREW

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1.1 DANGEROUS GOODS CARRIED BY PASSENGERS OR CREW

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Table 8-1. Provisions for dangerous goods carried by passengers or crew

<i>Items or articles</i>	<i>Location</i>			Approval of the operator(s) is required	The pilot-in-command must be informed	<i>Restrictions</i>
	Checked baggage	Carry-on baggage	On the person			
...						
Consumer articles						
...						
15) Small packet of safety matches	No	No	Yes	No	No	a) no more than one per person; and b) intended for use by an individual.
"Strike anywhere" matches	No	No	No	n/a	n/a	Forbidden.
Small cigarette lighter	No	No	Yes	No	No	a) no more than one per person; b) intended for use by an individual; and c) does not contain unabsorbed liquid fuel (other than liquefied gas).
Lighter fuel and lighter refills	No	No	No	n/a	n/a	Forbidden.

Items or articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked baggage	Carry-on baggage	On the person			
<u>Battery-powered lighters (powered by a lithium ion or lithium metal battery) (e.g. laser plasma lighters, tesla coil lighters, flux lighters, arc lighters and double arc lighters) without a safety cap or means of protection against unintentional activation</u>	No	No	No	n/a	n/a	Forbidden.
<u>Battery-powered lighters (powered by a lithium ion or lithium metal battery) (e.g. laser plasma lighters, tesla coil lighters, flux lighters, arc lighters and double arc lighters) with a safety cap or means of protection against unintentional activation</u>	No	No	Yes	n/a	n/a	<u>a) carried by passengers or crew for personal use;</u> <u>b) recharging of the devices and/or batteries on board the aircraft is not permitted;</u> <u>c) each battery must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3; and</u> <u>d) Each battery must not exceed the following:</u> <u> i) for lithium metal batteries, a lithium content of 2 grams, or</u> <u> ii) for lithium ion batteries, a Watt-hour rating of 100 Wh.</u>
Premixing burner lighter (see the Glossary of Terms in Attachment 2) with a means of protection against unintentional activation	No	No	Yes	No	No	a) no more than one per person; b) intended for use by an individual; and c) does not contain unabsorbed liquid fuel (other than liquefied gas).
Premixing burner lighter (see the Glossary of Terms in Attachment 2) without a means of protection against unintentional activation	No	No	No	n/a	n/a	Forbidden.
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