



## **DANGEROUS GOODS PANEL (DGP) MEETING OF THE WORKING GROUP OF THE WHOLE**

**Montréal, 15 to 19 October 2012**

### **Agenda Item 5: Issues related to lithium batteries**

#### **AIRCRAFT CABIN SERVICE TROLLEY WITH LITHIUM BATTERY AND CARBON DIOXIDE CYLINDER**

(Presented by A. Tušek)

##### **SUMMARY**

A new type of aircraft cabin service trolley is being developed and incorporates the use of a lithium battery and a carbon dioxide cylinder.

It is believed that approval for this equipment is being sought as an aircraft part rather than as dangerous goods of the operator.

The attached details are for the information of the DGP.

Action by the DGP-WG is in paragraph 2.

### **1. INTRODUCTION**

1.1 An airline in Australia recently attended a trade show and was shown a new type of aircraft cabin service trolley. The trolley is marketed as equipment for use in flight to serve hot drinks and carbonated beverages.

1.2 The design of the trolley includes the use of a large lithium battery (approximately 168 Wh) and a carbon dioxide cylinder (5 kg), both of which can be changed in-flight.

1.3 The manufacturer was approached and has stated they do not currently have any aviation approval for the system but informed me that “Right now we are applying for STC, which will be followed by TSO until end of 2012.”

1.4 An STC means this trolley becomes part of the aircraft certification (as part of the aircraft) and the dangerous goods would not be controlled by the Technical Instructions.

1.5 The TSO would mean the trolley has an approval as aircraft equipment such as a unit load device that incorporates dry ice for which the carriage of dry ice is controlled by the Technical Instructions.

2. **ACTION BY THE DGP**

2.1 The documents in the appendix to this information paper are provided for information of the DGP.

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**APPENDIX A**

**SKY TENDER DATA AND FACTS**



# sky:tender

High class for drinks



## SkyMax GmbH

Grosshorst 3  
30916 Isernhagen  
Germany

phone +49 5136 9723066

[www.SkyMax.eu](http://www.SkyMax.eu)  
[info@SkyMax.eu](mailto:info@SkyMax.eu)

## Data and facts "SkyTender"

Name	SkyTender
Sales	SkyMax GmbH, Grosshorst 3, D-30916 Isernhagen
Development	Air-Eltec Luftfahrtelektrik GmbH, Junostrasse 1, D-35745 Herborn
Dimensions	Standard trolley Atlas format
Weight	45 kg (without liquids), 85 kg (fully loaded)
Necessary accessories	CO2-bottles, accumulator, water container, syrup bags
Operation	Accumulator 12V, 15Ah / operating time 24h.
Packaging system of the syrups	Bag-In-Box and drinks
Capacity of syrups and drinks	830 ml per bag (10 slots)
Capacity of hot water	up to 30 litres
Capacity of cold water	up to 30 litres
Offer	Up to 30 different drink mixes per trolley filling. All types of juices, soft drinks, mixed drinks with and without alcohol, hot and cold, from any available sorts
Filling quantity	More than 220 drinks with 180ml drink size
Bar-Code system	RFID technology
Certifications	Preparation flight test phase is running, STC 2011, then TSO

## Further benefits in key points

- Goods are ordered and tracked software-based. It is possible to read/determine requirements on the device. Identification and reading of the goods by RFID.
- No deposit system for bottles, less bottle waste owing to favourable Bag-in-Box surrounding packaging, instead of 1-litre or 1.5-litre-bottles only syrups are transported.
- Hot and cold drinks are produced by the SkyTender therefore coffeemakers, hot water boiler etc. are no longer required, there is no longer a need to boil coffee in the galley.
- Water is cooled and insulated in the container. Dry ice for cooling, which is very complex in the handling (skin contact protection of the employees etc.) and is expensive is no longer needed.

More information can be found at [www.skymax.eu](http://www.skymax.eu)

# SkyMax

**APPENDIX B**  
**SKY TENDER'S BROCHURE**



sky tender

High class for drinks

**The First And Only  
Fully Automated Beverage System**



SkyMax



Using SkyTender as a new and innovative way to get passengers served with all kinds of drinks, makes the job of all airline personnel a lot easier. Time and money is saved, since all drinks come at a push of a button. Thus the drinks trolley becomes a universal dispenser of hot and cold beverages.

The elegant trolley avoids a lot of waste on board since bottles and cans are no longer necessary. Hot water boilers for coffee and tea are no longer required. Which saves weight and space—and ultimately fuel and carbon dioxide, too.

More than 220 drinks, including beer and wine, are dispensed from the SkyTender fully automatically. It is the ideal universal trolley, developed for the aviation industry with both the passengers and cabin crew in mind.



SkyMax 





**"I find using SkyTender a real break-through in the way we can serve our passengers. All drinks at the push of a button—even hot tea and coffee, and wine, too! That's really a move forward!**

**I also found that fizzy drinks come in a much better quality since the SkyTender trolley adjusts to air pressure at the different altitudes, which is a real plus for the passengers.**

**Having no more cans and bottles avoids a lot of trash, and fewer walks to the galley makes the job a lot easier!"**

SkyTender is a light-weight, easy to use system. Hot and cold drinks are dispensed at a push of a button, with replacable containers of water and syrups being stored inside the trolley.

Using the SkyTender system, there is a good chance that one or even more heavy-weight trash compactors can be saved on board. SkyTender's standard trolley size ensures its compatibility to aircraft galleys.



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