International Civil Aviation Organization

DGP-WG/26-WP/31
20/10/26

WORKING PAPER

DANGEROUS GOODS PANEL (DGP) WORKING GROUP MEETING (DGP-WG/26)

Centurion, South Africa, 26 to 30 October 2026

Agenda Item 3: Facilitating safe transport of dangerous goods by air (Ref: REC-A-DGS-2029)

IDENTIFICATION OF HYBRID VEHICLES IN TRANSPORT

(Presented by B. Firkins)

Summary

This working paper informs the working group of an International Air Transport Association (IATA) proposal (see the appendix to this working paper) to the United Nations Sub-Committee of Experts on the Transport Of Dangerous Goods (UNSCETDG) to introduce proper shipping names that explicitly identify hybrid vehicles (St/Sg/Ac.10/C.3/2026/62). The proposal responds to concerns raised by air operators regarding the ability to readily identify hybrid vehicles offered for transport. IATA seeks the support of the working group for the proposal at the UN Sub-Committee. For Information, The paper is provided at the appendix

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 At the sixty-eighth session of the UN Sub-Committee, IATA presented informal document UN/SCETDG/68/INF.29 seeking views on improving the identification of hybrid vehicles in the Dangerous Goods List. Hybrid vehicles are currently assigned to UN 3166, **Vehicle, flammable gas powered** or **Vehicle, flammable liquid powered**, neither of which identifies from the proper shipping name that the vehicle is a hybrid incorporating a rechargeable battery system which also powers the vehicle.

1.2 The ability to distinguish hybrid vehicles is important to air operators for acceptance, handling and operational risk assessment. In the absence of clear identification, some operators have introduced variations prohibiting the carriage of hybrid vehicles, while others require shippers to specifically indicate on the dangerous goods transport document whether the vehicle offered for transport is a hybrid vehicle. These measures demonstrate the operational importance the industry places on being able to readily identify these vehicles.

1.3 In the 67th (2026) edition of the Dangerous Goods Regulations,, IATA introduced descriptive (light font) text to accompany the existing proper shipping names for UN 3166 and four special handling codes (formerly known as IMP codes) to assist operators who wished to be better informed of the dangerous goods being offered.

1.4 Following discussion at the sixty-eighth session of the UN Sub-Committee and further consultation with industry, IATA has developed a formal proposal for consideration by the UN Sub-Committee at its sixty-ninth session, reproduced in the appendix to this working paper. The proposal enjoys strong support of the aviation industry.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to provide its views on and to support the addition of the proposed two proper shipping names for UN 3166 proposed for inclusion in the UN Model Regulations as presented in the appendix to this working paper. Comments from panel members are welcomed and, where appropriate, will be taken into account in finalizing the submission to the UN Sub-Committee.

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APPENDIX

FORMAL DOCUMENT ST/SG/AC.10/C.3/2026/62

United Nations ST/SG/AC.10/C.3/2026/62

Secretariat

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Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Sixty-ninth session
Geneva, 23 November-1 December 2026
Item 4 of the provisional agenda
Listing, classification and packing

Identification of hybrid powered vehicles in the dangerous goods list

Transmitted by the International Air Transport Association (IATA)*

Introduction

1. At the sixty-eighth session, IATA presented informal document TDG/68/INF.29 proposing amendments to enable identification of hybrid vehicles assigned to vehicle entries in the Dangerous Goods List. INF.29 noted that dedicated entries now exist for lithium-ion and sodium-ion battery-powered vehicles, but hybrid vehicles are assigned to UN 3166 entries that do not explicitly identify their hybrid nature.

2. Aircraft operators were concerned with not being aware of, or being able to manage the safety risk associated with transporting hybrid vehicles.

I. Background

3. The introduction of UN 3556 and UN 3558 improved risk identification and hazard communication by allowing vehicles powered by lithium-ion and sodium-ion batteries to be readily identified in transport documentation.

4. Hybrid vehicles are assigned to UN 3166, VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED, notwithstanding the presence of a rechargeable battery system which is also used to power the vehicle. As noted in INF.29, the current proper shipping names do not readily identify the presence of the battery system incorporated within the vehicle.

* A/80/6 (Sect. 20), table 20.7.

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II. Discussion

5. While the existing classification provisions for vehicles remain applicable, an operator cannot readily determine from the dangerous goods description whether a vehicle assigned to UN 3166 is:

(a) Solely powered by a flammable liquid or flammable gas; or

(b) A hybrid vehicle incorporating both an internal combustion power system and a rechargeable battery system that is used to power the vehicle.

6. To support airlines accepting vehicles for transport, IATA introduced, effective 1 January 2026, two additional descriptive entries for UN 3166 hybrid vehicles to augment the existing two entries for UN 3166. The existing entries were:

UN 3166 **Vehicle, flammable gas powered**

UN 3166 **Vehicle, flammable liquid powered**

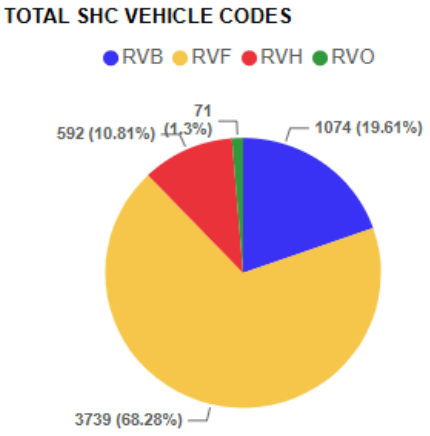
The additional entries were:

UN 3166 **Vehicle, flammable gas powered,** hybrid

UN 3166 **Vehicle, flammable liquid powered,** hybrid

7. The additional entries did not affect information systems or transport by other modes of transport. They did not generate any questions from the industry regarding SP188. There were no questions about the different types of hybrid vehicles (Plug-in Hybrid Electric Vehicles (PHEV), Hybrid Electric Vehicles (HEV) and Mild Hybrid Electric Vehicles (MHEV)). Aircraft operators just modified their dangerous goods booking systems to question whether a UN 3166 was a hybrid vehicle.

8. Additionally, to support operators in communicating the various vehicle types to their employees, four vehicle related Special Handling Codes were introduced. Data collected to date indicates that twenty-seven airlines are actively using these codes for vehicle movements between 156 countries. The distribution of the codes used is as follows:



- **RVF**[1] **-** (UN 3166 flammable liquid and flammable gas-powered vehicles): **69%**
- **RVB**[2] - (UN 3556, UN 3557 & UN 3558 lithium or sodium-ion battery-powered vehicles): **19%**
- **RVH**[3] **-** (UN 3166 hybrid vehicles): **11%**
- **RVO**[4] **-** (UN 3171 other battery-powered vehicles such as NiMH, etc): **1%**

Figure I: Distribution of vehicle handling code use

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[1] Regulated Vehicle, Flammable Fuel (Vehicle, flammable gas or flammable liquid powered)
[2] Regulated Vehicle, Battery (Vehicle, battery powered)
[3] Regulated Vehicle, Hybrid (Vehicle, hybrid)
[4] Regulated Vehicle, Other (Vehicle, other battery-powered e.g. NiMH, etc)

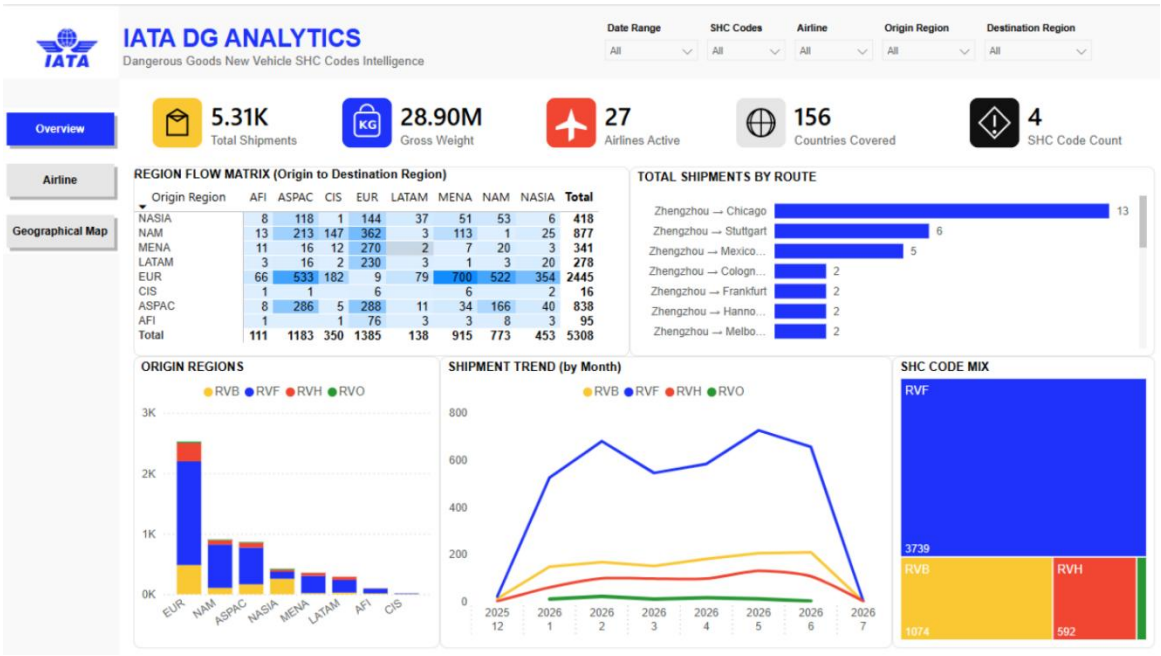


Figure II: Use of vehicle handling codes by region and route

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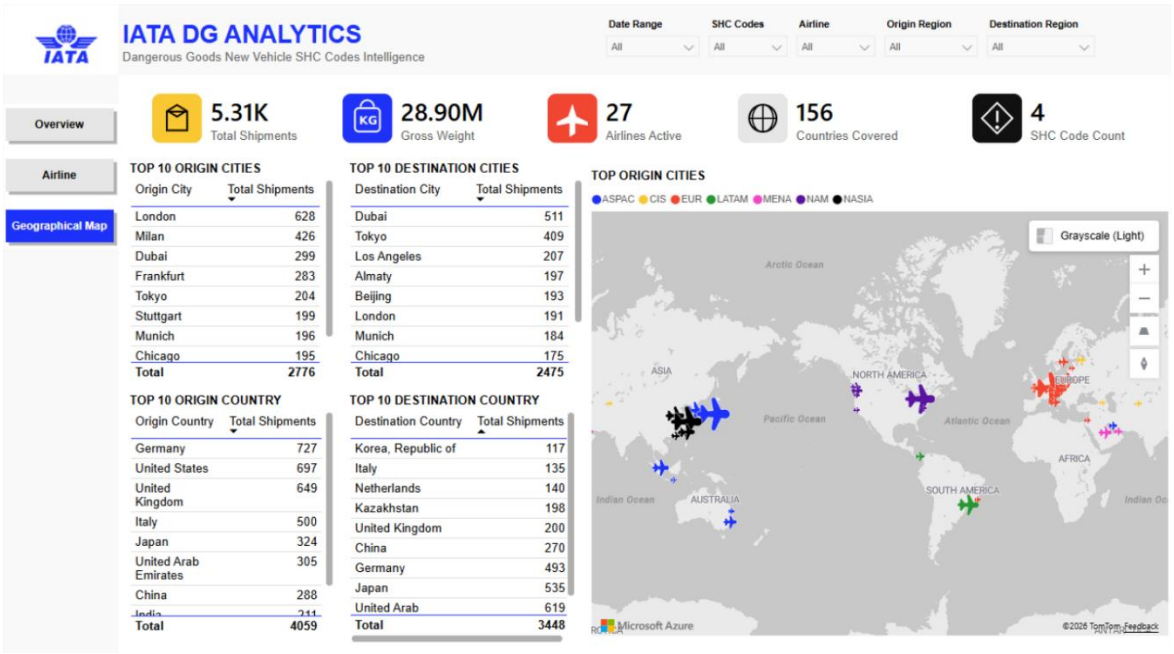
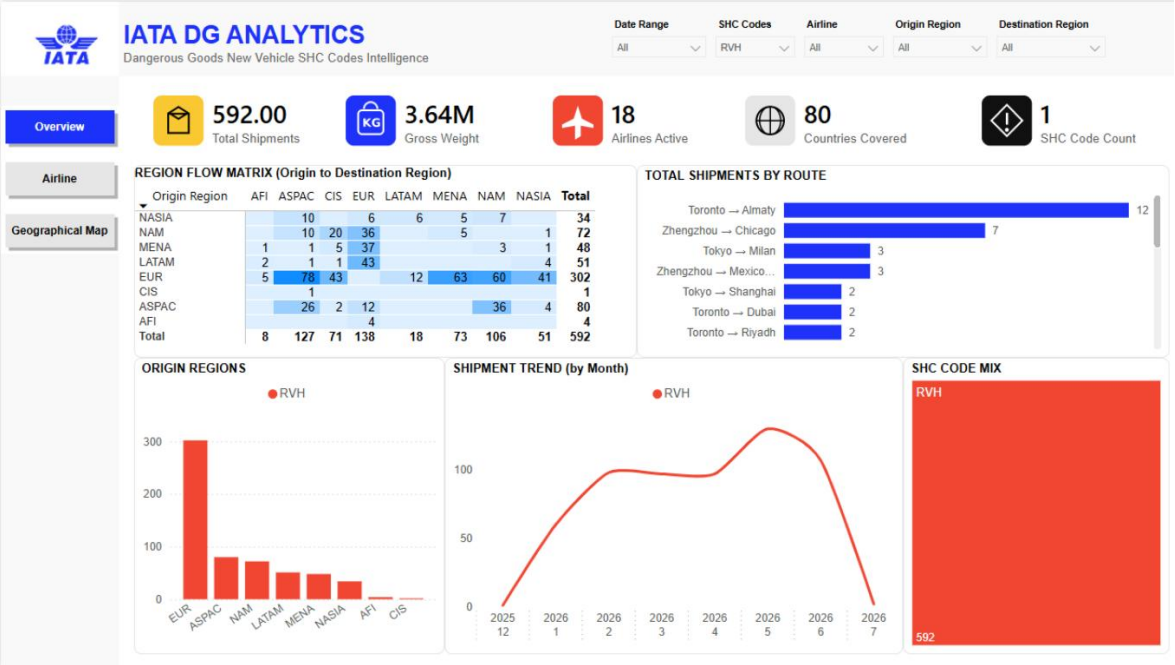


Figure III: Origin and destination cities for vehicle shipments transported by air

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This chart illustrates that 5,310 consignments associated with the use of the four Special Handling Codes (SHC), were transported by 27 airlines across 156 countries, highlighting the broad global reach of these movements. The origin and destination city rankings suggest that major aviation and logistics hubs, including London, Milan, Dubai, Tokyo, and Los Angeles, play a key role in facilitating international vehicle shipments, including hybrid vehicles. The data further indicates significant traffic flows into both established automotive markets and strategic regional logistics centres, underscoring the extensive international network supporting these movements.



Origin Region	AFI	ASPAC	CIS	EUR	LATAM	MENA	NAM	NASIA	Total
NASIA		10		6	6	5	7		34
NAM		10	20	36		5		1	72
MENA	1	1	5	37			3	1	48
LATAM	2	1	1	43				4	51
EUR	5	78	43		12	63	60	41	302
CIS		1							1
ASPAC		26	2	12			36	4	80
AFI				4					4
Total	8	127	71	138	18	73	106	51	592

Figure IV: Hybrid vehicle shipments by region and route

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This chart shows that 18 operators were active in transporting 592 consignments of UN 3166, flammable liquid-powered hybrid vehicles, across 80 countries. Europe was the dominant origin region, accounting for approximately 302 shipments (51%) of all consignments, with the largest trade lanes being concentrated between Europe, Asia-Pacific, North America, and the Middle East. This demonstrates broad global participation in the movement of hybrid vehicles.

9. The analysis of this data demonstrates that the distinction between hybrid vehicles and other vehicle types is meaningful in international transport operations and that operators consider such information sufficiently important to warrant separate identification.

10. Taking into account the comments made by delegates and experts during the sixty-eighth session, IATA considered several options, including the introduction of a new UN number for hybrid vehicles. Following, consultation with industry stakeholders this approach would result in a number of consequential amendments and was generally not supported. The alternatives were to either replicate the IATA approach of additional descriptive text options to the existing UN 3166 entries:

UN 3166 VEHICLE, FLAMMABLE GAS POWERED, hybrid

or to add "Hybrid as an optional proper shipping name, i.e.:

UN 3166 VEHICLE, FLAMMABLE GAS POWERED, HYBRID

11. Following consultation with the aviation industry, the resounding support is for additional proper shipping names.

III. Proposal

Chapter 2.9

2.9.2 Under "Other substances or articles presenting a danger during transport, but not meeting the definitions of another Class" amend the entries for UN 3166 as follows (new text in **bold**, **underlined**):

"3166 VEHICLE, FLAMMABLE GAS POWERED or
3166 VEHICLE, FLAMMABLE GAS POWERED HYBRID or
3166 VEHICLE, FLAMMABLE LIQUID POWERED or
3166 VEHICLE, FLAMMABLE LIQUID POWERED HYBRID or
3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or
3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED

Chapter 3.2

12. For UN 3166, amend the proper shipping name in column (2) of the dangerous goods list as follows (new text in **bold**, **underlined**):

"VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or **VEHICLE, FLAMMABLE GAS POWERED, HYBRID or VEHICLE, FLAMMABLE LIQUID POWERED, HYBRID or** VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED"

Alphabetical index

13. Insert the following entries in the alphabetical order:

"VEHICLE, FLAMMABLE GAS POWERED HYBRID	9	3116
VEHICLE, FLAMMABLE LIQUID POWERED HYBRID	9	3166"