International Civil Aviation Organization

DGP-WG/20-WP/22
23/10/20

WORKING PAPER

DANGEROUS GOODS PANEL (DGP)
WORKING GROUP OF THE WHOLE (DGP-WG/20)

Virtual, 19 to 23 October 2020

REPORT OF THE MEETING

(Presented by the Secretary)

1. INTRODUCTION

1.1 The Dangerous Goods Panel Working Group Meeting (DGP-WG/20) was convened from 19 to 23 October 2020 under the chairmanship of Ms. M. Paquette and the vice-chairmanship of Mr. T. Muller. A face-to-face meeting had been originally scheduled, but the working group had to meet virtually on account of the COVID-19 pandemic. The schedule was limited to three hours of discussion each day, recognizing it would be difficult for those in different time zones to adhere to normal meeting hours.

2. ATTENDANCE

2.1 The meeting was attended by the following panel members, advisers and observers:

Members	Advisers/Observers	State/International Organization
S. Bitossi		Australia
L. Cascardo		Brazil
M. Paquette	S. Cumberbirch G. Sansoucy	Canada
	P. Guo A. Lee (Hong Kong) F.K. Lam (Hong Kong) F. Tai Z. Qiu Q. Yang	China

Members	Advisers/Observers	State/International Organization
P. Tatin		France
	S. Weizenhöfer	Germany
P. Privitera	A. Pellas	Italy
M. Araya	Y. Funai K. Nakano H. Oda T. Tanaka K. Yanagawa	Japan
T. Muller	E. Boon R. Dardenne H. Strijbosch K. Vermeersch	Netherlands
	D. Kurdchenko	Russian Federation
	S. Maharaj	South Africa
M. De Castro	Á. de Marcos F. Rodríguez Guzmán	Spain
H. Al Muhairi	H. Abdel-Monem K. Alblooshi T. Howard H. Jamil S. Khan	United Arab Emirates
	J. Hanafin	United Kingdom
D. Pfund	M. Givens R. Hill K. Leary K. Miller E. Petrie K. Ranck	United States
D. Brennan	C. Chan	International Air Transport Association (IATA)
D. Ferguson		International Coordinating Council of Aerospace Industries Associations (ICCAIA)
S. Schwartz	T. Lempiainen M. Phaneuf D. Schlichting	International Federation of Air Line Pilots' Associations (IFALPA)

Advisers

E. Sigrist S. Schultes	European Chemical Industry Council (CEFIC)
E. Altemos V. Arthur G. Leach	Dangerous Goods Advisory Council (DGAC)

Observers

M. Böhm	Austria
S. Hakola	Finland
F. Hamilton Carroll	Rwanda
R. Cataldo N. Hagmann	Switzerland
E. Canari L. Calleja Barcena	European Aviation Safety Agency (EASA)
A. McCulloch T. Rogers	Global Express Association (GEA)
E. Remy	North Atlantic Treaty Organization (NATO)

3. REVIEW OF THE REPORT

3.1 Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods

3.1.1 Agenda Item 1.1: Develop proposals, if necessary, for amendments to Annex 18 — *The Safe Transport of Dangerous Goods by Air*

3.1.1.1 There were no amendments to Annex 18 proposed under this agenda item.

3.1.2 **Agenda Item 1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2023-2024 Edition**

3.1.2.1 **Allowance for Large Articles Containing Environmentally Hazardous Substances (DGP-WG/20-WP/1) and Allowance for Large Articles Containing Non-Flammable Non-Toxic Gas, n.o.s. (DGP-WG/20-WP/15)**

3.1.2.1.1 An amendment was proposed to allow for the transport of articles containing environmentally hazardous substances classified as UN 3548 **— Articles containing miscellaneous dangerous goods, n.o.s** on both passenger and cargo aircraft. A separate but similar proposal to allow for the transport of UN 3538 — **Articles containing non-flammable, non-toxic gas, n.o.s.** with no subsidiary hazards was also made. UN 3548 and UN 3538, along with several other UN numbers covering articles containing other classes and divisions of dangerous goods, were added to the 2019-2020 Edition of the Technical Instructions for the sake of alignment with the UN Model Regulations. The twenty-seventh meeting of the DGP (DGP/27, 16 to 20 September 2019) recommended that they be forbidden for transport by air because of insufficient data on the types and quantities of dangerous goods that would be contained in such articles and the belief that the need to transport them by air was limited. The panel assigned Special Provision A2 to most entries, which would allow for their transport on cargo aircraft with the approval of the appropriate national authorities.

3.1.2.1.2 The two proposals were made to address needs to transport specific articles. For UN 3548, there was a need for operators to transport aircraft components that contained large quantities of hydraulic fluid classified as environmentally hazardous. The quantity of hydraulic fluid exceeded what was permitted if it were assigned to UN 3363 — **Dangerous goods in apparatus**. It was proposed that the low hazard to air transport posed by environmentally hazardous substances justified allowing their transport as UN 3548 **— Articles containing miscellaneous dangerous goods, n.o.s**. An amendment to Table 3-1 and the addition of a new packing instruction was therefore proposed. For UN 3538, there was a need to transport new types of magnetic resonance imaging (MRI) scanners containing compressed helium. The scanners were transported as UN 1046 — **Helium, compressed**, but approval of the State of Origin was necessary as full compliance with the packing instruction assigned to it was not possible (Packing Instruction 200). It was suggested that allowing transport of them when assigned to UN 3538 — **Articles containing non-flammable, non-toxic gas, n.o.s** was justified on the basis that non-flammable, non-toxic gases without any subsidiary hazards and some specific articles containing similar gases were permitted on passenger and cargo aircraft. The amendment proposing to allow transport of UN 3538 provided two options for amending Table 3-1, a new special provision, a new packing instruction, and a consequential amendment to Part 5 requiring an indication of the new special provision on the transport document. The first option for amending Table 3-1 was the inclusion of a new entry in Table 3-1 that added light type text to the proper shipping name excluding refrigerated liquefied gas and gas with a subsidiary hazard and the second option simply added a reference to a new special provision in the applicable column of Table 3-1 against the existing entry for UN 3538.

3.1.2.1.3 There was over-all support for the proposals in principle, with a preference for an option that did not involve adding a new entry to Table 3-1. However, while there was a degree of confidence that the specific article described in DGP-WG/20-WP/15 could be safely transported as UN 3548 in accordance with the proposed provisions, there was concern with whether an equivalent level of safety would necessarily be achieved with other articles. It was also noted that provisions related unpackaged articles in paragraph 4.1.3.8 of the UN Model Regulations needed further review prior to adoption of new

provisions for large, unpackaged articles. Revised proposals based on the discussion would be developed for the next working group meeting.

3.1.3 **Agenda Item 1.3: Develop proposals, if necessary, for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2023-2024 Edition**

3.1.3.1 There were no amendments to the Supplement proposed under this agenda item.

3.2 **Agenda Item 2: Managing air-specific safety risks and identifying anomalies**

3.2.1 **Agenda Item 2.1: Develop proposals, if necessary, for amendments to Annex 18 — *The Safe Transport of Dangerous Goods by Air***

3.2.1.1 There were no amendments to Annex 18 proposed under this agenda item.

3.2.2 **Agenda Item 2.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2023-2024 Edition**

3.2.2.1 **Inclusion of Alcohol-Based Hand Sanitizer into Part 1;2.2 (DGP-WG/20-WP/2)**

3.2.2.1.1 There was an increasing need for operators to carry alcohol-based cleaning products and hand sanitizers for use by flight crew, cabin crew and passengers to help prevent the spread of COVID-19. An amendment to the exceptions for dangerous goods of the operator in Part 1;2.2 of the Technical Instructions was proposed to facilitate the operator's ability to carry such products. While this would be possible without an amendment through an authorization from the State of the Operator, it was suggested that this was a problem in at least some States that did not understand the scope of the provisions, and seeking approval was a cumbersome process for operators even in States that did. Making a specific allowance for the carriage of alcohol-based cleaning products and hand sanitizers by an operator in the Technical Instructions would remove potential roadblocks and support the need for a safe, sanitary operating environment for passengers and crew to contain the spread of COVID-19 that was highlighted in guidance developed by the Council Aviation Recovery Task Force (CART). It was further proposed that an amendment be incorporated in the 2019-2020 and the 2021-2022 Editions of the Technical Instructions through an addendum.

3.2.2.1.2 There was full agreement that operators needed to be able to safely carry cleaning products to help prevent the spread of COVID-19, and a there was a willingness to remove roadblocks to doing so. The Secretariat noted that the prescriptive provisions in Part 1;2 and the need for amendments to address emerging needs had been identified as a problem in the past, and the panel had acknowledged that a holistic solution that would make the provisions more stable was necessary. The working group was therefore encouraged to consider other measures that would be immediately effective without having to amend the provisions in the Technical Instructions. This might be guidance on the carriage of alcohol-based cleaning products by the operator published on the COVID-19 operational measures website and/or in an electronic bulletin to States urging them to take action. However, the working group maintained an amendment to the Technical Instructions was the only way to immediately address the problem. There

were some who thought removing the State of the Operator from the process should be avoided and that a better approach would be to include more specifics by including quantity and location requirements to guide a State's assessment. Most did not think this was necessary as they were confident operators were capable of addressing the risk associated with carrying these goods with the help of existing industry guidance. Including a quantity limitation was opposed, as the need and the risk would vary depending on the aircraft type and the type of operation. There was some discussion on whether specifying "alcohol-based" hand sanitizers was too restrictive and whether the intent was to restrict allowance of other cleaning products to alcohol-based as well. Some felt there was a need to make it clear that the allowance was restricted to the cabin and not in a cargo hold. A revised proposal was agreed which did not specify "alcohol-based" cleaning products and included wording to make it clear that the allowance was intended for use on the aircraft by the operator during the flight or series of flights. The working group agreed to recommend incorporating the amendment in the Technical Instructions as soon as possible, but acknowledged that there would not be time to process it for incorporation in the 2019-2020 Edition. An amendment to be incorporated in the 2021-2022 Edition through an addendum was agreed.

3.2.2.2 **Revisions to Passenger Provisions for Toiletry Articles Carried by Passengers or Crew (DGP-WG/20-WP/3)**

3.2.2.2.1 An amendment to Table 8-1 was proposed to address the need for passengers to carry alcohol-based hand sanitizers to prevent the spread of COVID-19. Although Table 8-1 already provided a mechanism to allow hand sanitizers to be carried, modifications to the table that made the passenger provisions less prescriptive and more hazard based that were introduced in the 2019-2020 Edition of the Technical Instructions had caused operators to have different interpretations as to what was allowed. An amendment which added examples to the entry for non-radioactive medicinal articles, including medicines containing alcohol, was proposed in an attempt to promote consistent interpretation. While there was support for the intent, there were concern that this would go against the principle that the panel had agreed to when restructuring Table 8-1, which was to make it less prescriptive. There were also concerns that the proposed text might contradict security limits for medicines. The working group concluded that a better approach would be to provide guidance on the COVID-19 operational measures website. Accordingly, text was developed with input from aviation security experts within the Secretariat. It is presented in Appendix B to this report. The Secretariat would publish it on the ICAO public website as a matter of urgency (**https://www.icao.int/safety/COVID-19OPS/Pages/DangerousGoods.aspx**).

3.2.2.3 **Clarification of the Loading Restrictions of Dangerous Goods in an Aircraft Cabin or on the Flight Deck (DGP-WG/20-WP/5)**

3.2.2.3.1 Part 7;2.1.1 prohibited dangerous goods from being carried in an aircraft cabin other than those permitted in accordance with the exceptions for dangerous goods of the operator in Part 1;2.2.1, those permitted to be carried by passengers and crew in accordance with Part 8, and excepted packages of radioactive material. The working group was invited to consider whether the exception for radioactive material, excepted packages was justified or whether it should be removed from Part 7;2.1.1. The provision had been in the Technical Instructions for many years, and panel members surmised there may no longer be reason for allowing these packages in the passenger cabin. However, the working group agreed that more research was needed to understand the original intent for introducing the provision and that the IAEA should be notified to ensure removing it wouldn't have a negative impact. The Secretariat would research the issue at ICAO and discuss with the IAEA before the next working group meeting.

3.2.2.4 **Loading of Dangerous Goods on Aircraft (DGP-WG/20-WP/11)**

3.2.2.4.1 The practice of repurposing underutilized passenger aircraft during the COVID-19 pandemic in order to increase cargo capacity by loading cargo in the passenger cabin focused attention on the loading and stowage provisions in Part 7;2 of the Technical Instructions, which led to the discovery of inconsistencies. States and industry indicated to ICAO that they were prohibiting dangerous goods from being loaded in the passenger cabin and requiring that they be loaded in the hold. This had been recommended by airframe manufacturers, since passenger cabins were not certified cargo holds and were not designed to handle a larger fire that may result when dangerous goods were involved. However, the prescriptive provisions in the Technical Instructions did not align with this approach because they prohibited dangerous goods in a cabin *occupied by passengers*. This provision was likely added with the assumption that there would always be passengers in a passenger cabin, and the needs that had arisen from the pandemic were probably never anticipated. The need to reconsider assumptions that were made when drafting the loading requirements in the Technical Instructions had been raised in the past, particularly with respect to accessibility requirements. The provisions were prescriptive, and benefits in considering a more performance-based approach that would take various cargo compartments, aircraft types, and operational conditions into account had been raised. The argument for doing this had been strengthened with the new cargo compartment safety Standards and Recommended Practices (SARPs) that the Council adopted for incorporation as a new Chapter 15 in Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*. The working group was therefore invited to discuss ways of achieving a more performance-based approach to determining where dangerous goods should be loaded on aircraft.

3.2.2.4.2 There was strong support for an in-depth review of the provisions. It was reported that some State regulators had been working on guidance to mitigate risks associated with using a main deck passenger cabin as a cargo compartment. This was being done through their airworthiness departments with input from operations and other experts. It was further suggested that thought be given to whether or not references to specific classes of cargo compartments in the Technical Instructions and the other dangerous goods documents should be maintained, noting that these were used in some national regulations but not in any other ICAO document. The Secretariat would consult with airworthiness operations and experts within ICAO and determine how best to progress work on the subject, potentially with the new Flight Operations Panel Safe Carriage of Goods Specific Working Group (FLTOPSP-SCGSWG).

3.2.2.5 **Revisions to Special Provision A46 (DGP-WG/20-WP/6)**

3.2.2.5.1 Special Provision A46, which applied to UN 3175 — **Solids containing flammable liquid, n.o.s.**, excepted small inner packagings consisting of sealed packets or articles containing less than 10 mL of a Packing Group II or III flammable liquid absorbed into a solid material, provided there was no free liquid in the packet or articles. Alcohol wipes were being transported in increasing numbers to meet demand during the COVID-19 pandemic, and many of these wipes, depending how they were packed, could meet the conditions of this special provision. However, the wording of it was ambiguous which had resulted in different interpretations of it. An amendment which aligned the text with the corresponding special provision in the UN Model Regulations (SP 216) and with the wording of Special Provision A158, which contained similar conditions, was agreed. The working group further agreed that the amendment be incorporated in the 2021-2022 Edition of the Technical Instructions by way of a corrigendum because of the increased need to transport alcohol wipes during the pandemic.

3.2.2.6 **Replacement of Marks by the Operator (DGP-WG/20-WP/7)**

3.2.2.6.1 Part 7;2.7 required operators to replace labels for packages of dangerous goods that were lost, detached or illegible, but there was no such requirement for marks. It made sense not to require this for marks when the provisions for labels were originally adopted, since the only marks required at that time were the UN number and proper shipping name, the name and address of the shipper and consignee, and the UN specification marks, when applicable. Marks had been introduced since that time that were often adhered to packages in the same manner as labels, and there was the potential for them to become detached or illegible. An amendment introducing the same requirements for marks as existing ones for labels was therefore proposed. The amendment extended the existing requirement for labels to be replaced in accordance with the information provided on the dangerous goods transport document to other documentation, when applicable, owing to the fact that some marks were required on packages for which a dangerous goods transport document was not required, such as lithium batteries packed in accordance with Section II of the applicable packing instructions and UN 3373 — **Biological substance, Category B**. There was much support for the amendment in principle, but some thought the scope of it was too broad in that it should only apply to the marks required that were in addition to the standard proper shipping name, name and address of the shipper and consignee, and UN specification number, when applicable. One member thought referring to "other" documentation was also too broad, and that specific types of documentation should be included. A revised proposal based on the discussion would be prepared for the next working group meeting.

3.2.2.7 **Amendment to Special Provision A61 (DGP-WG/20-WP/8)**

3.2.2.7.1 Special Provision A61 excepted UN 2212 — **Asbestos, amphibole** and UN 2590 — **Asbestos, chrysotile** from the Technical Instructions under certain conditions. A requirement for the words "not restricted" and the special provision number to appear on the air waybill, when issued, was proposed to prevent delays in transit caused by operator uncertainty with respect to shipper compliance. It was noted that a thorough review of every exception in the Technical Instructions had been conducted earlier in the panel's history (see paragraph 2.2.2 of the report of the twenty-third Meeting of the DGP (DGP/23)) to distinguish between:

a) an exception on account of an article or substance that would not be classified as dangerous goods and therefore permitted to be carried by passengers and crew; and

b) those which were excepted when transported as cargo despite being classified as dangerous goods and therefore not permitted to be carried by passengers and crew unless permitted in accordance with Part 8.

The DGP/23 review resulted in the inclusion of the words "as cargo" in the case of the latter. It was suggested that these words were deliberately not added to Special Provision A61 at that time because UN 2212 and UN 2590 would not be classified as dangerous goods if they met the conditions specified. Because of this, there was a concern that a reference to "not restricted" and the special provision number might unnecessarily alert an operator into thinking a consignment did contain dangerous goods and block or delay the shipment, which was what the proposal was trying to prevent. It was therefore suggested the amendment was unnecessary. However, the special provision contained packing requirements for manufactured articles, and compliance with these would not be communicated to the operator under the existing exception. Some members thought this may not have been considered during the DGP/23 review. There were no objections to the proposal by panel members. The amendment was therefore agreed.

3.2.2.8 **Additional Information for Radioactive Material on the Dangerous Goods Transport Document (DGP-WG/20-WP/9)**

3.2.2.8.1 Events in one State which led to denials of shipment of radioactive material needed for urgent medical reasons were attributed to the lack of sufficient detail on the dangerous goods transport document where an A_1 or an A_2 value was used from Table 2-13 for a radionuclide not specifically listed in Table 2-12. An amendment to the provisions for information to be provided by the shipper for radioactive material consignments in Part 5;4.1.5.7 was proposed which introduced a requirement for a reference to Table 2-13 to be provided with the intent of preventing unnecessary denials of shipment by the operator.

3.2.2.8.2 There was strong support for the proposal in principle, with several others indicating similar problems in their States. There was a suggestion that the issue be brought to the attention of the International Atomic Energy Agency (IAEA) so that consideration might be given to adding the specific radionuclide to Table 2-12. However, the IAEA had a lengthy amendment process making it years before the table would be updated. In any case, the working group concluded this would not be necessary since the amendment did not alter any IAEA provisions, it simply facilitated the acceptance process and prevented unnecessary denials of shipment by providing operators a degree of comfort. It was believed that the IAEA would welcome the amendment, noting its support of any measures aimed at preventing such denials, particularly with respect to radionuclides with short half-lives. There were some suggestions with respect to the wording and placement of the proposal and whether or not a note was necessary. The proposed amendments were agreed to and placed in square brackets to allow members time to consider alternative wording. It was agreed to notify the IAEA of this action.

3.2.2.9 **Appropriate Use of "Storage" and "Stowage" in the Technical Instructions and its Supplement (DGP-WG/20-WP/10)**

3.2.2.9.1 Inconsistencies with respect to the use of the terms "storage" and "stowage" in Annex 18, the Technical Instructions and the Supplement were identified. "Loading and stowage" was referred to in paragraph 8.3 of Annex 18, but the Technical Instructions referred to "Storage and loading" in Part 7;2.1. "Storage" was referred to in relation to dangerous goods loaded on aircraft elsewhere in the Technical Instructions and its Supplement. The working group was invited to review these references and consider whether they should be revised to refer to "stowage". It was agreed that "stow" or " stowage" should be used when referring to goods on the aircraft, and " store" or "storage" should be used when referring to goods in a warehouse or storage facility. The working group supported a thorough review of the terminology, with suggestions that some of the provisions related to storage were beyond the scope of the Technical Instructions and could therefore be removed. Panel members were invited to provide the Secretariat with comments via correspondence. A formal proposal would be presented at the next working group meeting.

3.2.2.10 **Additional Packing Requirements for Solids Containing Liquids, n.o.s. (DGP-WG/20- WP/12)**

3.2.2.10.1 A dangerous goods incident was reported involving leakage from packages containing disinfectant wipes impregnated with ethanol found while unloading cargo from an aircraft. The goods were part of a large consignment and were classified as UN 3175 — **Solids containing flammable liquid, n.o.s..** They were packed in plastic inner packagings within fibreboard outer packagings. Many of the packages were found to have been loaded on their side and upside down, which caused the lids of the inner packagings to be damaged during the flight and the liquid to leak into the outer packagings. An amendment to the packing instructions assigned to UN 3244 — **Solids containing corrosive liquid,**

n.o.s., UN 3175 — **Solids containing flammable liquid, n.o.s.** and UN 3243 — **Solids containing toxic liquid, n.o.s.** was proposed with the intent of preventing any recurrences of the incident. The amendment introduced a requirement for a leakproof liner or equally effective means of intermediate containment if the outer packaging was not leakproof. The amendment was supported in principle, but not everyone supported the wording, and there was concern that it might have a multimodal impact. A new proposal would be presented at the next working group meeting taking this into account.

3.2.2.11 Revisions to Special Provision A180 (DGP-WG/20-WP/18)

3.2.2.11.1 Special Provision A180 excepted non-infectious specimens containing small quantities of dangerous goods assigned to UN No. 1170 (**Ethanol, Ethanol solution**, **Ethyl alcohol** or **Ethyl alcohol solution**), UN No. 1198 (**Formaldehyde solution, flammable**), UN No. 1219 (**Isopropanol** or **Isopropyl alcohol)** and UN No. 1987 (**Alcohols, n.o.s.**) from the Technical Instructions, provided certain conditions were met. Two of the conditions referred to alcohol or an alcohol solution but not to a formaldehyde solution. An amendment referring to formaldehyde solution in the conditions was therefore proposed. The amendment was agreed, subject to a minor editorial revision.

3.2.2.12 Revisions to Names of Self-Reactive Substances (DGP-WG/20- WP/20)

3.2.2.12.1 Names of three self-reactive substances in Table 2-6 of the Technical Instructions did not align with the established nomenclature for naming organic compounds recommended by the International Union of Pure and Applied Chemistry (IUPAC). Lower case “n” was used in the Technical Instructions where an upper case “N” was necessary. It was noted that lowercase “n” and uppercase “N” had a completely different meaning according to the IUPAC’s nomenclature. An amendment to Table 2-6 of the Technical Instructions was proposed to correct the anomaly. It was noted that the difference was not evident in the corresponding table of the UN Model Regulations (2.4.2.3.2.3), because the full name of each self-reactive was shown there in uppercase. The working group agreed the revision could be considered as editorial and therefore included in a corrigendum to the 2021-2022 Edition of the Technical Instructions.

3.2.2.13 Revisions to Packing Instructions Involving Gross Weight (DGP-WG/20- WP/21)

3.2.2.13.1 Packing Instructions Y956, Y958 and Y964 contained total quantity per package limits and total gross mass per package limits. The former was 30 kg, and the latter 30 kg G. Table 3-1 aligned with the latter by setting the maximum net quantity per package at 30 kg G for dangerous goods for which Packing Instructions Y956, Y958 and Y964 are assigned. It was suggested that the total quantity per package column in the packing instructions was unnecessary and contradicted the other limits when the total quantity of a package was 30 kg, since the gross mass would exceed 30 kg. An amendment to delete the column was therefore proposed. The working group did not have time to review the proposal since it was a late submission. It would be presented at the next working group meeting.

3.2.3 Agenda Item 2.3: Develop proposals, if necessary, for amendments to the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) for incorporation in the 2023-2024 Edition

3.2.3.1 There were no amendments to the Supplement proposed under this agenda item.

3.2.4 Agenda Item 2.4: Development of proposals, if necessary, for amendments to the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481) for incorporation in the 2023-2024 Edition

3.2.4.1 Accessibility of Dangerous Goods (DGP-WG/20-WP/19)

3.2.4.1.1 UN 3528 (**Engine, internal combustion, flammable liquid powered**, **Engine, fuel cell, flammable liquid powered**, or **Machinery, internal combustion, flammable liquid powered** and **Machinery, fuel cell, flammable liquid powered**) and UN 3529 — (**Engine, internal combustion, flammable gas powered** or **Engine, fuel cell, flammable gas powered** or **Machinery, internal combustion, flammable gas powered** or **Machinery, fuel cell, flammable gas powered**) had been added to the list of dangerous goods that were not subject to specific loading requirements for packages bearing the cargo aircraft only label in Part 7;2.4.1 of the Technical Instructions, but they had not been added to the similar provisions in Section 1.5 of Doc 9481. It was agreed that this was an oversight, but the amendment proposed was a late submission and panel members did not have time to review it thoroughly. They also saw the need to review the provisions related to loading restrictions more generally (see paragraphs 3.2.2.3 and 3.2.2.4 of this report). The working group decided to defer a decision on the proposal until a more holistic review of the provisions could be done.

3.3 Agenda Item 3: Managing safety risks posed by the carriage of lithium batteries by air

3.3.1 Agenda Item 3.1: Consider how lithium battery package standard under development by SAE G27 Committee (AS6413) can be incorporated into ICAO provisions (Job card DGP.003.02)

3.3.1.1 Status of SAE G-27 Lithium Battery Packaging Performance Standard (DGP-WG/20-IP/5)

3.3.1.1.1 The co-chair of the SAE International G27 Lithium Battery Packaging Performance Committee, established at the request of ICAO, provided an update on the development of the lithium battery package performance standard, including a high-level review of its contents and projected timeline for completion. The draft standard was reaching a level of maturity for it to be put through the SAE's formal review and voting process. This was expected to be done in the coming months. Although consensus was not an expected outcome of this first review, it would formalize positions on the various aspects of the standard and clearly identify the areas that needed further work. He emphasized that the timeline was projected and could change based on the committee's progress.

3.3.1.2 EASA Research on Lithium Battery Fires and (DGP-WG/20-IP/6)

3.3.1.2.1 A presentation was given on a research project on lithium battery fires led by the European Aviation Safety Agency (EASA). The project included research into the effectiveness of the test methods described in the draft SAE lithium battery packaging performance standard, the identification and assessment of additional mitigation measures related to packaging solutions and multi-layered solutions, and a specific evaluation of these solutions in an environment representative of a typical large aeroplane Class C cargo compartment. The project also included the development of a generic risk assessment method based on the results of this research aimed at supporting operators in

defining the appropriate requirements for safely transporting lithium batteries. A final report of the research project was expected to be published on the EASA website.

3.3.1.2.2 The working group was also informed of future EASA-led research projects. One was aimed at evaluating the effectiveness of both halon-based and non-halon-based cargo fire suppression systems in the event of a lithium battery thermal runaway event in battery-powered devices in checked baggage. The second project involved research on the fire risk in cabins, although the budget for this project had yet to be approved.

3.3.1.3 Lithium Battery Package Performance Standard (DGP-WG/20-WP/17)

3.3.1.3.1 Earlier versions of the SAE lithium battery package performance standard included a section on conformance claims and markings, the intent of which was to provide confidence that a specific cell or battery part number combined with a specific package part number were equivalent to a successfully tested combination. The text was eventually removed from the standard, because the objective of the provisions was considered to be something for regulators to address. The SAE G27 Committee, understanding that the success of the standard would be dependent on a system that would provide regulators and the aviation industry confidence that the specific combination was one that met the test criteria, requested that ICAO be informed of the absence of conformance claims and markings in the standard. It requested feedback as to how ICAO intended this activity to be addressed. Accordingly, the working group was invited to discuss the issue and determine what feedback should be provided to the SAE committee.

3.3.1.3.2 The draft standard did include documentation requirements intended to provide evidence of conformity of the assembled package and its contents to the minimum performance requirements in the form of two reports. One was intended to be retained by the package qualification organization that performed the package tests. It qualified the test and included very detailed information regarding the manufacturer of the batteries, cells and packaging material; specific descriptions of the packaging material, lithium batteries or cells and the instruments used for the test; specific procedures followed in conducting the test; and detailed, visual evidence of a successful test. The second report was a summary report intended for the user of the package. It included more general information about the battery or cell and packaging material and information necessary to validate the successful conduct and completion of the test. DGP-WG/20 recognized this information as being important, but that it would not be practical for transport. Operators and other entities in the supply chain would need packages meeting the SAE standard to bear some kind of marks confirming compliance with the standard and identifying the quantity and type of batteries permitted. The standard included criteria for determining the types of changes to the battery, cell or packaging that would warrant a new test or analysis. Packages meeting the criteria would be deemed equivalent to a cell or battery and packaging combination that had successfully passed the test. There was a view that some type of regulatory oversight would need to be in place in order to give the aviation industry confidence that the package really was equivalent to a package that had passed the test.

3.3.1.3.3 The working group agreed that the subject of conformance marks and any other measures necessary to provide the aviation industry with confidence that a package was a type meeting the criteria of the SAE standard was beyond the scope of the SAE G27 Committee. It was agreed that the subject was something that could be addressed through the newly-established DGP Working Group on Energy Storage Devices (DGP-WG/Energy Storage Devices) (see paragraph 3.8.4 of this report) for review by the full panel. DGP-WG/20 did not want to give any impression that conducting this work was an indication that the SAE standard would be implemented by ICAO once complete. The standard would need to be reviewed by all relevant technical panels at ICAO before it could be recommended for implementation. Regardless, the working group recognized the need to be prepared if it were to be

accepted by ICAO and that developing measures would be beneficial for any external standards that may be considered in the future.

3.3.2 **Agenda Item 3.2: Consider marking, labelling and documentation requirements for lithium battery packages meeting the SAE G27 Committee draft standard AS6413 (Job card DGP.003.02)**

3.3.2.1 There were no working papers submitted under this agenda item.

3.3.3 **Agenda Item 3.3: Consider the need for amendments to address impact from proposed amendment to Annex 6, Volume I on cargo compartment safety (Job cards DGP.003.02 and FLTOPSP.043)**

3.3.3.1 **Amendment to the Guidance to States on the Transport of Lithium Batteries as Cargo Contained in the Supplement to the Technical Instructions (DGP-WG/20-WP/13)**

3.3.3.1.1 The twenty-seventh meeting of the DGP (DGP/27, Montréal, 16 to 20 September 2019) was presented with amendments to guidance material for States on the transport of lithium batteries contained in Part S-1;4 of the Supplement to the Technical Instructions (see paragraph 3.6.1 of the DGP/27 Report). The amendment was developed for the sake of alignment with safety risk assessment provisions that the Council subsequently adopted for incorporation in Annex 6, Part I, Chapter 15 on cargo compartment safety and to highlight the hazards associated with electronic devices powered by lithium batteries in checked baggage, recalled batteries or devices, and undeclared lithium batteries. The amendment was not considered mature enough at DGP/27, but there was support for further developing it. DGP-WG/20 was invited to revisit the issue and consider how best to move forward with completing the guidance material.

3.3.3.1.2 There was support for ensuring the guidance material did not contradict the new provisions in Annex 6, Part I and agreement that the proposed amendment needed refinement, but there were some disagreements with regard to the safety risk assessment provisions, i.e.:

c) Some believed the list of criteria that should be considered when conducting a safety risk assessment on the carriage of lithium batteries proposed for the Supplement was too specific and were concerned it implied a new requirement above and beyond what was required by Annex 6 and Annex 19. Others believed it was appropriate to include specific guidance for dangerous goods in the Supplement to the Technical Instructions, and particularly lithium batteries, given the complexity of identifying their specific hazards and the significant risk they posed to aviation safety. There was no intent to have anything above or beyond what was already required in Annex 19. The provisions in Annex 6 and its supporting guidance provided clarity with respect to what needed to be considered in a risk assessment involving all items in a cargo compartment, and the Supplement provided clarity with respect to dangerous goods.

d) Some believed suggesting specific criteria that an operator needed to take into account when conducting a safety risk assessment on lithium batteries went beyond the role of the Supplement and that any guidance should be limited to States when considering whether or not to grant approvals or exemptions. Others agreed the Supplement's role was to guide States and that the list of specific criteria did just

that, as it helped States evaluate whether operators under their authority were conducting effective safety risk assessments.

e) There were concerns that State authorities would conclude that an operator's inability to know the specific hazards of each battery and cell type to be carried and their chemical composition would lead to State authorities concluding that they should never be carried under any circumstance, and that this was considered unjustified. Others, while recognizing this as a challenge under the current classification system for lithium batteries, stressed that not knowing had to be taken into account in a safety risk assessment. Effective hazard identification was the basis on which the dangerous goods regulations were built. Although there was a clear indication of the hazards for other classes of dangerous goods, this was not the case for Class 9. While identifying the batteries as lithium ion or lithium metal distinguished them from other Class 9 dangerous goods, the risk was inadequately conveyed. This was the impetus for the request to the UN Committee of Experts to develop a more granular hazard classification system for lithium batteries. Not knowing the specific hazards associated with each cell or battery would not necessarily mean the operator could not transport them, but they might need to implement additional risk mitigation measures to do so.

3.3.3.1.3 Despite some differences of opinion, all agreed the guidance in the Supplement needed to be further developed and that there was a need to clarify and refine the proposed material to ensure there was no ambiguity or potential for misinterpretation. Some saw this as a matter of high priority, given the number of reported lithium battery incidents. These included fires that had occurred in warehouses, which could have occurred on an aircraft if timing had been different. It was agreed that refining the guidance should be done by one of the newly-established DGP working groups. Which group would be assigned the task would be determined by the chairs and the rapporteurs of each working group in coordination with the Secretariat at a later date.

3.3.4 Agenda Item 3.4: Consider measures to mitigate safety risks posed by lithium batteries carried and/or used by passengers, crew and the operator (Job card DGP.005.01)

3.3.4.1 Translation Enhancement of the Word Used for "Power Banks" in the French Edition Of The Technical Instructions (DGP-WG/20-IP/1)

3.3.4.1.1 Translation of the word "power banks" in Table 8-1 of the French edition of the Technical Instructions (item 1) g)) as "chargeurs" was interpreted by some passengers as chargers instead of power banks. It was proposed to revise the French text and to include the English term "power banks" in brackets to ensure the right interpretation. Providing the English words "power banks" was deemed appropriate because these devices had been marketed in French on-line shops as "batteries externes" or "power banks". The Chief of the ICAO French Section noted that including English wording in other language versions of documents was not a normal practice at ICAO, but understood this was a necessary safety measure to ensure there was no misinterpretation. The Secretariat would arrange to have the text modified through a corrigendum and to consider whether similar amendments were necessary in the other language versions. The adviser from the Russian Delegation suggested adding the English words to the Russian edition as well. Panel members who used the other language versions were invited to review the current translation in the Technical Instructions and to provide comments to the Secretariat.

3.3.5 **Agenda Item 3.5: Consider the need for specific measures to mitigate safety risks posed by lithium batteries packed with or contained in equipment**

3.3.5.1 There were no working papers submitted under this agenda item.

3.3.6 **Agenda Item 3.6: Develop provisions aimed at improving compliance throughout the transport supply chain, including simplification of provisions, guidance on State oversight and outreach, and responsibilities of entities outside the aviation stream (Job card DGP.003.02)**

3.3.6.1 **Clarification of the Packing Requirements for Packing Instructions 966 and 969 (DGP-WG/20-WP/4)**

3.3.6.1.1 Amendments to Sections I and II of the packing instructions for lithium batteries packed with equipment (Packing Instructions 966 and 969) were proposed to clarify their intent. The proposer also sought feedback on whether or not additional information should be provided to the operator when lithium cells or batteries were packed in UN specification packagings and then placed with equipment in an outer packaging.

Section I

3.3.6.1.2 Section I of each packing instruction provided two options for shippers to prepare packages. The intent for one was to pack the cells or batteries and the equipment in a UN specification outer packaging, and the intent of the other was to pack the cells or batteries in a UN specification packaging and to pack this packaging with the equipment in a non-UN specification outer packaging. The actual text in the packing instructions did not make this clear. The amendment proposed with the intent of making it clear aligned the text more closely with what was provided in the applicable packing instruction of the UN Model Regulations (P903). An additional editorial revision that was not included in the working paper to refer to "strong rigid" outer packaging when the cells or batteries were placed with the equipment in it was also proposed. There were no objections to the proposed amendment, as revised.

Section II

3.3.6.1.3 Two options for shippers to prepare packages were provided in Section II of Packing Instructions 966 and 969, but the outcome of both was the same. An amendment to address this, which aligned with the associated provision in the UN Model Regulations (special provision 188), was proposed. An industry adviser objected to this amendment, suggesting it deviated from the UN Model Regulations. Others noted that UN special provision 188 did not explicitly refer to lithium batteries packed with equipment, it referred to batteries installed in equipment. The Technical Instructions were intentionally more stringent than the special provision in the UN Model Regulations in that they required strong rigid outer packaging, which was not required in the UN Model Regulations. There were no objections from any panel members to the proposed amendment.

Need for additional information

3.3.6.1.4 The working group was invited to consider if an additional mark on the package or statement on a document should be required or recommended when the lithium cells or batteries were packed in a UN specification packaging and then packed, with equipment, in an outer packaging in accordance with Section II. The absence of a visible UN specification mark on the outer packaging had

resulted in rejections of consignments because of difficulties in verifying during acceptance checks that a packaging specification mark designating the packaging was appropriate for the dangerous goods, as required by Part 7;1.3.1 d). While members recognized there were challenges, there was no support for an additional mark on the package. The problem was seen as something that needed to be addressed for operators and not something that should create additional requirements for shippers. Requiring an overpack mark or an indication that inside packages complied with prescribed specifications when UN specification packaging was used but the mark was not visible were suggested as a potential solution, but there was no support for this.

3.3.6.1.5 The proposed amendments to Section I of Packing Instructions 966 and 969, as revised, and Section II of Packing Instructions 966 and 969, were agreed.

3.3.6.2 **Removal of Extraneous Text from Packing Instructions 966 and 969 (DGP-WG/20-WP/16)**

3.3.6.2.1 An amendment to clarify the requirements for protection against short circuits in Packing Instructions 966 and 969 was proposed. The packing instructions applied to lithium ion batteries packed with equipment and lithium metal batteries packed with equipment, respectively. Sections I and II of each packing instruction contained a requirement for the equipment to be equipped with an effective means of preventing accidental activation. This implied that Packing Instruction 966 and 969 allowed the equipment to be shipped with installed lithium batteries, which was not the case. It was therefore proposed that the text be deleted.

3.3.6.2.2 Amendments to address a lack of consistency between Sections I and II and between Packing Instruction 966 and 969 for wording of identical requirements were also proposed. It was suggested that the lack of consistency contributed to challenges in complying with the lithium battery provisions.

3.3.6.2.3 The amendments were agreed.

3.3.7 **Agenda Item 3.7: Monitor UN Committee's work on hazard-based system for classification of lithium batteries and consider impact on ICAO provisions (Job card DGP.003.02)**

3.3.7.1 There were no working papers submitted under this agenda item.

3.4 **Agenda Item 4: Clarifying State oversight responsibilities in Annex 18 (Job card DGP.005.01)**

3.4.1 There were no working papers submitted under this agenda item.

3.5 **Agenda Item 5: Aviation Security/Dangerous Goods Coordination (Job Card DGP.001.02)**

3.5.1 There were no working papers submitted under this agenda item.

3.6 **Agenda Item 6: Coordination with other panels**

3.6.1 **Agenda Item 6.1: Flight Operations Panels (FLTOPSP)**

3.6.1.1 No papers were submitted under this item.

3.6.2 **Agenda Item 6.2: Airworthiness Panel (AIRP)**

3.6.2.1 No papers were submitted under this item.

3.6.3 **Agenda Item 6.3: Safety Management Panel (SMP)**

3.6.3.1 No papers were submitted under this item.

3.6.4 **Agenda Item 6.4: Remotely Piloted Aircraft Systems Panel (RPASP)**

3.6.4.1 **Review of draft Annex 6, Part IV — Remotely Piloted Aircraft System (RPAS) Operations SARPs (DGP-WG/20-WP/14)**

3.6.4.1.1 Draft Standards and Recommended Practices (SARPs) on remotely piloted aircraft system (RPAS) operations were developed by a working group of the Remotely Piloted Aircraft System Panel (RPASP) for inclusion in Annex 6 as a new Part IV — *International Aviation — Remotely Piloted Aircraft Systems*. The draft SARPs were limited to international, instrument flight rules RPAS operations within controlled airspace and from controlled aerodromes by operators holding an RPAS operator certificate. They were drafted using source material from an RPAS manual, an RPAS concept of operations for international instrument flight rules (IFR) operations document, and Annex 6, Part I. They followed the form and layout of Annex 6, Part I as far as possible. They were not intended to cover the operation of smaller unmanned aircraft such as drones. These would continue to be regulated through individual State legislation. Comments from the DGP on the latest draft were requested and would be reviewed by the first meeting of the RPASP Working Group of the Whole (WGWHL/1) scheduled the same week as DGP-WG/20 (19 to 23 October 2020). An updated version of the draft SARPs would be presented to the seventeenth meeting of RPASP (15 to 19 March 2021) for endorsement. DGP members and advisers reviewed the SARPs via correspondence and provided comments for RPASP-WGWHL/1 prior to DGP-WG/20. The final comments were provided to DGP-WG/20. The working group was invited to review the draft SARPs and comments and to consider the types of revisions to Annex 18 and the Technical Instructions that might be necessary to accommodate RPAS operations.

3.6.4.1.2 Panel members emphasized the importance of progressing this work and agreed a job card should be developed. A draft job card was prepared by the Secretariat for the panel's review following DGP-WG/20. It is included in Appendix C to this report.

3.6.5 **Agenda Item 6.5: Any other panels**

3.6.5.1 There were no working papers submitted under this agenda item.

3.7 **Agenda Item 7: Harmonization of *Guidance Material for the Dangerous Goods Panel (DGP) to Aid in the Preparation of the Technical Instructions and Supporting Documents* with revised dangerous goods provisions**

3.7.1 There were no working papers submitted under this agenda item.

3.8 Agenda Item 8: Other business

3.8.1 Report of the third ICAO/Universal Postal Union (UPU) Contact Committee Meeting (DGP-WG/20-IP/2)

3.8.1.1 The Secretary presented the report of the third meeting of the ICAO/Universal Postal Union (UPU) Contact Committee Meeting which had been convened virtually, on account of the COVID-19 pandemic, on 22 and 23 June 2020.

3.8.1.2 The Secretary noted an on-line tool developed by the UPU to search for prohibited and restricted articles based on the customs declaration system. Enhancements to the tool were planned in the future. She also noted a survey involving the acceptance of equipment containing lithium batteries by designated postal operators (DPOs). The survey revealed that a relatively small number of DPOs had approval to accept these articles in the post. The meeting had emphasized the importance of greater collaboration among the various stakeholders (e.g. civil aviation authorities (CAAs), DPOs, ICAO and the International Air Transport Association (IATA)) to address the challenges in acquiring and granting approval to accept them. The UPU co-chair agreed to establish an expert team to examine the challenges. The DGP Secretary invited those interested in the detailed results of the survey to contact her.

3.8.1.3 Support was expressed for the continued efforts of the ICAO/UPU Contact Committee. It was important to have regular discussions, as dangerous goods not permitted in mail unknowingly being loaded on aircraft remained a concern. The member nominated by IATA noted inaccuracies in the report related to his organization that he wanted to bring to the attention of the UPU for correction.

3.8.1.4 There was much discussion on a proposal from a DPO to the ICAO/UPU Contact Committee allowing for the acceptance of lithium batteries packed with equipment in the mail that was discussed during the contact committee meeting. The DGP member from the same State as the one making the proposal advised that the DPO did not coordinate with the CAA when developing the proposal and that he was unaware of the proposal until after the contact committee meeting, but had since met with the DPO. The two agencies were considering a new proposal to the DGP which would extend the provisions for lithium batteries contained in equipment in the mail to those packed with equipment. He noted that the DPO would only accept these articles from one entity (“single customer”) that had good policies and procedures in place. Several panel members voiced opposition to this, noting that there were too many problems with what was already permitted in the mail. While there were some States with good systems in place, this was not the case all over the world. There remained deficiencies with respect to training. Lithium batteries contained in equipment in the mail was similar to Section II cells and batteries in that they were not transparent to the operator the way other dangerous goods were. The potential for even more lithium batteries to be onboard the aircraft without the knowledge of the pilot-in-command was not supported by the member nominated by the International Federation of Air Line Pilots’ Associations (IFALPA).

3.8.1.5 The Secretary noted that representatives from the UPU wanted to be present at DGP-WG/20 should there be discussions on any issues related to mail so that they could understand the DGP’s concerns and be able to inform the panel of on-going initiatives. They were unable to attend due to scheduling conflicts and requested that substantial discussions be deferred. It was agreed to convene a virtual meeting devoted to the subject at a time and date that was suitable to interested parties in the near future. The Secretary would arrange for this.

3.8.2 Considerations on acceptance of lithium batteries by designated postal operators (DGP-WG/20-IP/4)

3.8.2.1 Panel members shared concerns with significant numbers of dangerous goods discovered in airmail that were not permitted, including lithium batteries contained in equipment. There were reports of DPOs without required CAA approvals accepting lithium batteries contained in equipment in mail as part of e-commerce business and offering it to air operators as cargo and then delivering it to customers as mail. It was evident that the system put in place when lithium batteries contained in equipment were added to the list of dangerous goods permitted in airmail to ensure an acceptable level of safety was not working as intended. It was agreed that efforts needed to be taken to address this. Panel members would meet virtually to develop a framework of specific areas of concern and possible mitigation measures. The UPU would then be invited to meet with DGP members to discuss this framework. The Secretary would arrange for this.

3.8.3 COVID-19 related activities at ICAO and Information on IATA Activities Related to the Coronavirus Pandemic (DGP-WG/20-IP/3)

3.8.3.1 The Secretariat briefly outlined activities undertaken by ICAO in relation to COVID-19 and cargo. A website providing information and guidance related to COVID-19 safety operational measures was maintained (**www.icao.int/safety/COVID-19OPS**). Part of that site was devoted to alleviations to Standards in ICAO Annexes by States that were given due to compliance challenges caused by social distancing measures implemented to contain the spread of COVID-19 and the closing of businesses. A COVID-19 contingency related differences (CCRD) sub-system was created in the existing electronic filing of differences (EFOD) system to capture any differences from ICAO Standards on certification and licensing that might arise as a consequence to the COVID-19 pandemic. The system was established as an interim measure to support continued operations during the initial stages of the pandemic. Quick reference guides (QRGs) that provided guidance to ensure safety risks introduced by alleviations in specific areas were provided on the site, including one on dangerous goods training that had been developed by a virtual DGP working group. It was recognized that alleviations could not sustain safe operations indefinitely. The system would progressively be replaced with planning tools, approaches and guidance for the recommencement of operations in line with the requirements of the SARPs. There was a page on the site devoted to dangerous goods which included guidance on dangerous goods training during the COVID-19 pandemic, persons onboard a cargo-only aircraft carrying dangerous goods not permitted on a passenger-carrying aircraft and dangerous goods on aircraft with passenger cabins that have been repurposed for transport of cargo (**https://www.icao.int/safety/COVID-19OPS/Pages/DangerousGoods.aspx**). Guidance on the carriage of alcohol-based hand sanitizer in passenger and crew baggage developed by DGP-WG/20 (see paragraph 3.2.2.2) would be added to this site.

3.8.3.2 An overview of activities the International Air Transport Association (IATA) Cargo Department had been involved in to address dangerous goods issues that had emerged as a result of the COVID-19 pandemic was provided. These included the development of guidance on:

a) the transport of specimens of SARS-CoV-2;

b) the carriage of alcohol-based hand sanitizers;

c) the transport of human remains where the cause of death was COVID-19 in coordination with the Centers for Disease Control and Prevention (CDC), ICAO and the World Health Organization (WHO);

d) the loading of cargo and mail in the passenger cabin; and

e) the transport of vaccines.

The guidance documents were available at **www.iata.org/cargo** under a heading entitled "Keeping air cargo flying". A three-part webinar series on the transport of vaccines and life science products by air cargo was also planned. Information on the webinars was available at **www.iata.org/en/events/webinars**.

3.8.4 **Terms of reference for DGP working groups**

3.8.4.1 The idea of having different small, standing working groups with rapporteurs assigned to each who were made accountable for progressing ANC job cards, recurrent work programme items and other work identified by the panel had been briefly discussed at DGP/27. These would be in addition to the existing working groups on dangerous goods training and Annex 18. While job cards outlined tasks that needed to be completed within a set period of time, the working groups were intended as permanent bodies on the DGP that would lead the work on relevant job cards in addition to scrutinizing relevant proposed amendments developed by panel members and addressing issues raised by the panel. The chair, vice-chair and Secretariat had met prior to DGP-WG/20 to identify specific groups and to develop draft terms of reference for them. The draft terms of reference presented in Appendix D to this report were supported by DGP-WG/20, and rapporteurs for each group were nominated as follows:

a) DGP Working Group on Annex 18 (DGP-WG/Annex-18): A. Wagih, on behalf of H. Al Muhairi, would continue as rapporteur of this group;

b) DGP Working Group on UN Harmonization (DGP-WG/UN Harmonization): D. Brennan;

c) DGP Working Group on Training (DGP-WG/Training): T. Muller would continue as rapporteur of this group.

d) DGP Working Group on Energy Storage Devices (DGP-WG/Energy Storage Devices): D. Pfund.

e) DGP Working Group on the Supplement (DGP-WG/SUPPLEMENT): S. Bitossi

3.8.4.2 Those interested in joining the groups were invited to contact the rapporteurs directly.

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APPENDIX A

PROPOSED AMENDMENTS TO THE TECHNICAL INSTRUCTIONS

Part 1

GENERAL

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Chapter 2

LIMITATION OF DANGEROUS GOODS ON AIRCRAFT

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DGP-WG/20-WP/2 (see paragraph 3.2.2.1 of this report):

2.2 EXCEPTIONS FOR DANGEROUS GOODS OF THE OPERATOR

2.2.1 The provisions of these Instructions do not apply to the following:

a) articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations or that are authorized by the State of the Operator to meet special requirements;

b) aerosols, alcoholic beverages, perfumes, colognes, liquefied gas lighters and portable electronic devices containing lithium metal or lithium ion cells or batteries provided that the batteries meet the provisions of Table 8-1, Item 1) carried aboard an aircraft by the operator for use or sale on the aircraft during the flight or series of flights, but excluding non-refillable gas lighters and those lighters liable to leak when exposed to reduced pressure;

c) dry ice intended for use in food and beverage service aboard the aircraft;

d) alcohol-based hand sanitizers and cleaning products carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights for the purposes of passenger and crew hygiene;

~~d~~e) electronic devices, such as electronic flight bags, personal entertainment devices, and credit card readers, containing lithium metal or lithium ion cells or batteries and spare lithium batteries for such devices carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights, provided that the batteries meet the provisions of Table 8-1, Item 1). Spare lithium batteries must be individually protected so as to prevent short circuits when not in use. Conditions for the carriage and use of these electronic devices and for the carriage of spare batteries must be provided in the operations manual and/or other appropriate manuals as will enable flight crew, cabin crew and other employees to carry out the functions for which they are responsible.

2.2.2 Unless otherwise authorized by the State of the Operator, articles and substances intended as replacements for those referred to in 2.2.1 a), or articles and substances referred to in 2.2.1 a) which have been removed for replacement, must be transported in accordance with the provisions of these Instructions, except that when consigned by operators, they may be carried in containers specially designed for their transport, provided such containers are capable of meeting at least the requirements for the packagings specified in these Instructions for the items packed in the containers.

2.2.3 Unless otherwise authorized by the State of the Operator, articles and substances intended as replacements for those referred to in 2.2.1 b) ~~and~~, c) and d) must be transported in accordance with the provisions of these Instructions.

2.2.4 Unless otherwise authorized by the State of the Operator, battery-powered devices with installed batteries and spare batteries intended as replacements for those referred to in 2.2.1 ~~d)~~ e) must be transported in accordance with the provisions of these Instructions.

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Part 2

CLASSIFICATION OF DANGEROUS GOODS

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Chapter 4

CLASS 4 — FLAMMABLE SOLIDS; SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION; SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES

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4.2 FLAMMABLE SOLIDS, SELF-REACTIVE SUBSTANCES, DESENSITIZED EXPLOSIVES AND POLYMERIZING SUBSTANCES

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4.2.3 Division 4.1 — Self-reactive substances

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To be introduced into 2021-2022 Edition of the Technical Instructions through a corrigendum DGP-WG/20-WP/20 (see paragraph 3.2.2.12 of this report):

4.2.3.2.4 List of currently assigned self-reactive substances in packages

The following table (Table 2-6) is reproduced from 2.4.2.3.2.3 of the UN *Recommendations on the Transport of Dangerous Goods* (~~Eighteenth~~ Twenty-first revised edition), with irrelevant material removed.

Table 2-6. List of currently assigned self-reactive substances in packagings

Note.— Self-reactive substances to be transported must fulfil the classification and the control and emergency temperatures (derived from the self-accelerating decomposition temperature (SADT)) as listed.

Self-reactive substance	*Concentration (%)*	*Control temperature (°C)*	*Emergency temperature (°C)*	*UN generic entry*	*Notes*
. . .					
2-(~~n~~N, ~~n~~N-Ethoxycarbonylphenylamino)-3-methoxy-4-(~~n~~N-methyl- ~~n~~N-cyclohexylamino) benzenediazonium zinc chloride	63-92	+40	+45	3236	
2-(~~n~~N, ~~n~~N-Ethoxycarbonylphenylamino)-3-methoxy-4-(~~n~~N-methyl- ~~n~~N-cyclohexylamino) benzenediazonium zinc chloride	62	+35	+40	3236	
2-(~~n~~N, ~~n~~N-Methylaminoethylcarbonyl)-4-(3,4-dimethylphenylsulphonyl) benzenediazonium hydrogen sulphate	96	+45	+50	3236	
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Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

TIs *UN*

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To be introduced into 2021-2022 Edition of the Technical Instructions through a corrigendum DGP-WG/20-WP/6 (see paragraph 3.2.2.5 of this report):

A46 (≈216) Mixtures of solids which are not subject to these Instructions and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, providing there is no free liquid visible at the time the substance is packaged and, for single packagings, the packaging must pass a leakproofness test at the Packing Group II level. ~~Small inner packagings consisting of~~ ~~s~~Sealed packets ~~or~~ and articles containing less than 10 mL of a Packing Group II or III flammable liquid absorbed into a solid material are not subject to these Instructions provided there is no free liquid in the packet or articles.

. . .

DGP-WG/20-WP/8 (see paragraph 3.2.2.7 of this report):

A61 (168) Asbestos which is immersed or fixed in a natural or artificial binder (such as cement, plastics, asphalt, resins or mineral ore) in such a way that no escape of hazardous quantities of respirable asbestos fibres can occur during transport is not subject to these Instructions. Manufactured articles, containing asbestos and not meeting this requirement, are nevertheless not subject to these Instructions, when packed so that no escape of hazardous quantities of respirable asbestos fibres can occur during transport.

The words “not restricted” and the special provision number A61 must be provided on the air waybill when an air waybill is issued.

TIs *UN*

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DGP-WG/20-WP/18 (see paragraph 3.2.2.11 of this report):

A180 Non-infectious specimens, such as specimens of mammals, birds, amphibians, reptiles, fish, insects and other invertebrates containing small quantities of UN 1170, UN 1198, UN 1987 or UN 1219 are not subject to these Instructions provided the following packing and marking requirements are met:

a) specimens are:

1) wrapped in paper towel and/or cheesecloth moistened with alcohol ~~or~~, an alcohol solution or a formaldehyde solution and then placed in a plastic bag that is heat-sealed. Any free liquid in the bag must not exceed 30 mL; or

2) placed in vials or other rigid containers with no more than 30 mL of alcohol ~~or~~, an alcohol solution or a formaldehyde solution;

b) the prepared specimens are then placed in a plastic bag that is then heat-sealed;

c) the bagged specimens are then placed inside ~~a~~ another plastic bag with absorbent material then heat-sealed;

d) the finished bag is then placed in a strong outer packaging with suitable cushioning material;

e) the total quantity of flammable liquid per outer packaging must not exceed 1 L; and

f) the completed package is marked “scientific research specimens, not restricted Special Provision A180 applies”.

The words “not restricted” and the special provision number A180 must be provided on the air waybill when an air waybill is issued.

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Part 4

PACKING INSTRUCTIONS

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Chapter 11

CLASS 9 — MISCELLANEOUS DANGEROUS GOODS

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DGP-WG/20-WP/4 (see paragraph 3.3.6.1 of this report) and DGP-WG/20-WP/16 (see paragraph 3.3.6.2 of this report):

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

. . .

I. **SECTION I**

Each cell or battery must meet the provisions of 2;9.3.

. . .

I.2 **Additional requirements**

- Lithium ion cells and batteries must be protected against short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Lithium ion cells ~~or~~ and batteries must:
  - be placed in inner packagings that completely enclose the cell or battery, then placed in a ~~n outer~~ packaging of a type shown below that meets the Packing Group II performance requirements, then placed with the equipment in a strong, rigid outer packaging~~. The completed package for the cells or batteries must meet the Packing Group II performance requirements~~; or
  - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a packaging of a type shown below that meets the Packing Group II performance requirements.
- The equipment must be secured against movement within the outer packaging ~~and must be equipped with an effective means of preventing accidental activation~~.
- The number of cells or batteries in each package must not exceed the number required for the equipment's operation, plus two spare sets. A "set" of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment.
- Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.

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Packing Instruction 966

II. **SECTION II**

. . .

II.2 **Additional requirements**

— Lithium ion cells and batteries must~~:~~ be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid outer packaging.
~~— be placed in inner packagings that completely enclose the cell or battery, then placed in a strong rigid outer packaging; or~~
~~— be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid outer packaging.~~
— Cells and batteries must be protected ~~so as to prevent~~ against short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit.
— The equipment must be secured against movement within the outer packaging ~~and must be equipped with an effective means of preventing accidental activation~~.
— The number of cells or batteries in each package must not exceed the number required for the equipment's operation, plus two spare sets. A "set" of cells or batteries is the number of individual cells or ~~batters~~ batteries that are required to power each piece of equipment.

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Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

I. **SECTION I**

Each cell or battery must meet the provisions of 2;9.3.

. . .

I.2 **Additional requirements**

— Lithium metal cells and batteries must be protected against short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
— Lithium metal cells ~~or~~ and batteries must:
  — be placed in inner packagings that completely enclose the cell or battery, then placed in a ~~n outer~~ packaging of a type shown below that meets the Packing Group II performance requirements, then placed with the equipment in a strong, rigid outer packaging. ~~The completed package for the cells or batteries must meet the Packing Group II performance requirements~~; or
  — be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a packaging of a type shown below that meets the Packing Group II performance requirements.
— The equipment must be secured against movement within the outer packaging ~~and must be equipped with an effective means of preventing accidental activation~~.
— The number of cells or batteries in each package must not exceed the number required for the equipment's operation, plus two spare sets. A "set" of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment.
— For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9:
  — cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging surrounded by cushioning material that is non-combustible and non-conductive and placed inside an outer packaging.

. . .

II. **SECTION II**

. . .

II.2 **Additional requirements**

— Lithium metal cells and batteries must~~:~~ be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid outer packaging.
~~— be placed in inner packagings that completely enclose the cell or battery, then placed in a strong rigid outer packaging; or~~
~~— be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid outer packaging.~~

— Cells and batteries must be protected ~~so as to prevent~~ against short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit.
— The equipment must be secured against movement within the outer packaging ~~and must be equipped with an effective means of preventing accidental activation~~.

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Part 5

SHIPPER'S RESPONSIBILITIES

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Chapter 4

DOCUMENTATION

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4.1.5 Information required in addition to the dangerous goods description

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DGP-WG/20-WP/9 (see paragraph 3.2.2.8 of this report):

4.1.5.7 *Radioactive material*

4.1.5.7.1 The following information must be included for each consignment of Class 7 material, as applicable, in the order given:

a) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;

[*Note.— For radionuclides not listed in Table 2-12, refer to 5;4.1.5.8.1 g) for additional information required on the dangerous goods transport document.*]

b) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;

Note.— For empty Type B(U) or Type B(M) packages as specified in the Note to 2;7.2.4.1.1.7, the name or symbol of the radionuclide of the shielding material followed by the physical and chemical form must be included (e.g. U-dep., solid, metal oxide) in which case the indicated radionuclide may differ from the radionuclide(s) authorized in the package design certificate.

. . .

4.1.5.8 *Additional requirements*

4.1.5.8.1 The dangerous goods transport document must also contain:

a) except for radioactive material, the packing instruction applied. For shipments of lithium batteries prepared in accordance with Section IB of Packing Instruction 965 or Packing Instruction 968, the letters "IB" must be added following the packing instruction number;

Note.— Packing Instruction 622 from the 2019-2020 Edition of these Instructions was renumbered as 621 in this edition. Until 31 March 2021, Packing Instruction 622 may continue to be indicated on the dangerous goods transport document when applied to UN 3291, ***Biomedical waste, n.o.s., Clinical waste, unspecified, n.o.s., Medical waste, n.o.s.****, or* ***Regulated medical waste, n.o.s****.*

b) when applicable, reference to Special Provision A1, A2, A4, A5, A51, A78, A190, A191, A201, A202, A208, A211 or A212;

c) a statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo-only aircraft, as appropriate;

Note.— To qualify as acceptable for transport aboard passenger aircraft, passenger aircraft packing instruction number(s) must be used, and the package must not bear the "Cargo aircraft only" label. To qualify as acceptable for transport aboard cargo-only aircraft, cargo aircraft packing instruction number(s) must be used, and the package must bear the "Cargo aircraft only" label; or passenger aircraft instruction number(s) must be shown and no "Cargo aircraft only" label applied. However, where the packing instruction number(s) and the permitted quantity per package are identical for passenger and cargo aircraft, the "Cargo aircraft only" label should not be used.

d) special handling information, when appropriate;

e) an indication that an overpack has been used, when appropriate; ~~and~~

DGP-WG/20-WP/9 (see paragraph 3.2.2.8 of this report):

f) the "Q" value rounded up to the first decimal place, if substances are packed in accordance with 3;4.3.3 or 4;1.1.9 e) ~~.~~; and

[g) for radioactive material, where a radionuclide value in Table 2-13 is used for an individual nuclide not listed in Table 2-12, the type of radioactive contents and the use of Table 2-13 must be referenced. For example: "Table 2-13 used. Only beta- or gamma- emitting nuclides are known to be present".]

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French version and verify Chinese, Russian and Spanish
DGP-WG/20-IP/1 (see paragraph 3.3.4.1 of this report):

Partie 8

DISPOSITIONS RELATIVES AUX PASSAGERS ET AUX MEMBRES D'ÉQUIPAGE

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Tableau 8-1. Dispositions relatives aux transport de marchandises dangereuses par les passagers ou les membres d'équipage

Marchandises dangereuses	*Location*		***Approbation de l'exploitant ou des exploitants requise***	*Restrictions*
	Bagages enregistrés	*Bagages de cabine*		
Accumulateurs et batteries				
1) Batteries au lithium (y compris les appareils électroniques portables)	Oui [sauf dans le cas des alinéas g) et h)]	Oui	[voir les alinéas c) et d)]	. . . g) les batteries de rechange (~~y compris les chargeurs~~y compris les batteries externes (power banks) : — doivent être placées dans les bagages de cabine ; — doivent être protégées individuellement contre les courtscircuits (par l'utilisation de l'emballage original de vente au détail ou par un autre moyen pour isoler les bornes, par exemple par la pose de ruban sur les bornes non protégées ou l'utilisation de pochettes de protection ou de sacs de plastique distincts pour chaque batterie) ; . . .

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APPENDIX B

GUIDANCE ON THE CARRIAGE OF HAND SANITIZERS BY PASSENGERS AND CREW FOR PUBLICATION ON THE ICAO COVID-19 OPERATIONAL MEASURES WEBSITE

CARRIAGE OF ALCOHOL-BASED HAND SANITIZER IN PASSENGER AND CREW BAGGAGE

The use of hand sanitizers to help prevent the spread of COVID-19 has led to questions on restrictions that may apply when carried on board aircraft by passengers and crew. Alcohol-based hand sanitizers, also known as alcohol-based hand rubs, are dangerous goods subject to Annex 18 — *The Safe Transport of Dangerous Goods by Air*. Annex 18 excepts articles and substances carried by passengers or crew from its provisions to the extent specified in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284, "Technical Instructions"). The Technical Instructions restrict dangerous goods carried by passengers and crew in carry-on baggage, checked baggage or on one's person to those for personal use permitted in accordance with Table 8-1. The entry in Table 8-1 that most appropriately describes alcohol-based hand sanitizers/alcohol-based hand rubs is "Non-radioactive medicinal articles (including aerosols), toiletry articles (including aerosols) and aerosols in Division 2.2 with no subsidiary hazard".

The total net quantity of all articles in this entry carried by a passenger or crew member must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Where passengers or crew wish to carry alcohol-based hand sanitizers in their carry-on baggage, they may be restricted to a net quantity limit per container of 100 mL or additional restrictions imposed by States in the interests of aviation security. Additional information on security restrictions can be found in the ICAO *Guidelines for Aviation Security Contingency Measures during the COVID-19 Pandemic*. For more information, please contact ASP@icao.int.

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APPENDIX C

DRAFT ANC JOB CARD FOR DANGEROUS GOODS PROVISIONS TO SUPPORT RPAS OPERATIONS

JOB CARD

Title	Dangerous goods provisions to support RPAS operations	**Reference: DGP-WG.20**	**DGP.007.01**
Source	DGP-WG/20		
Problem Statement	Annex 18 and the Technical Instructions do not support draft Standards and Recommended Practices (SARPs) on the operation of remotely piloted aircraft currently being developed for inclusion in Annex 6 — *Operation of Aircraft* as a new Part IV — *International Aviation — Remotely Piloted Aircraft Systems*.		
Specific Details	The draft SARPs on the operation of remotely piloted aircraft currently under development for inclusion in Annex 6 — *Operation of Aircraft* as a new Part IV — *International Aviation — Remotely Piloted Aircraft Systems* include provisions allowing for the transport of dangerous goods, but Annex 18 — *The Safe Transport of Dangerous Goods by Air*, the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) and the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481) do not. The dangerous goods documents include specific requirements and recommendations for the carriage of dangerous goods based on whether an aircraft is a passenger or cargo aircraft, as defined in those documents. A remotely piloted aircraft could be considered a cargo aircraft, but the requirements for cargo aircraft established in the Technical Instructions may not be appropriate. A thorough review of Annex 18 and the Technical Instructions is necessary to determine how they can safely support the transport of dangerous goods on remotely piloted aircraft.		
GANP/GASP Link	3.3: Operational safety risks		
Expected Benefits	Clarify States responsibilities with respect to evaluating an operator's ability to manage the risks associated with dangerous goods on remotely piloted aircraft and provide operators with tools to manage the risks		
References	DGP-WG/20 Report, paragraph 3.6.4.1 Annex 18 — *The Safe Transport of Dangerous Goods by Air* Doc 9284, *Technical Instructions for the 7Safe Transport of Dangerous Goods by Air* Doc 9284SU, *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* Doc 9481, *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods*		
Primary Expert Group:	DGP		

WPE No.	Document Affected or Actions Needed	Description of Amendment proposal or Action	Supporting Expert Group	Status	Expected dates		
					Delivery	**Effective**	**Applicability**
	Action	Identify need for amendment or development of new SARPs in Annex 18, Instructions in Doc 9284 and guidance in Docs 9284SU and 9481 to support dangerous goods operations on remotely piloted aircraft in alignment with Annex 6			**Q4 2021**	**Q4 2021**	**Q4 2021**
	Action	Identify areas requiring collaboration between the DGP and other panels	FLTOPSP AIGP ADOP AIRP SMP AVSECP FALP		**Q4 2021**	**Q4 2021**	**Q4 2021**
	Action	Recommendation for amendments to Annex 18, associated dangerous goods documents and other Annexes	FLTOPSP AIGP ADOP AIRP SMP AVSECP FALP		**Q4 2022**	**Q4 2022**	**Q4 2022**
	Action	Preliminary assessment of impact of the above recommendations in terms of implementation			**Q4 2022**	n/a	n/a
Status:	**Priority:**	**Initial Issue Date:**	**Date Approved:**			**Session / Meeting:**	
	High		**ANC:**				

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APPENDIX D

TERMS OF REFERENCE FOR WORKING GROUPS OF THE DGP

DANGEROUS GOODS PANEL WORKING GROUP ON ANNEX 18 (DGP-WG/Annex-18) **TERMS OF REFERENCE**	
Mission	To ensure SARPs contained in Annex 18 clearly reflect current and foreseeable safety objectives, operational needs, and technological developments and align with related SARPs in other Annexes.
Tasks	1. Develop recommendations to address elements on ANC job cards and identified anomalies or gaps that apply to Annex 18. 2. Review proposed amendments to Annex 18, including those proposed by DGP members, its working groups, and other panels or technical bodies, to ensure each SARP meets the intended objectives, aligns with the principles of Annex 18, and adheres to the ANC guidelines contained in *Guide to the Drafting of SARPs and PANS.* 3. Ensure proposed SARPs for Annex 18 align with the principles and terminology provided in Annexes 6, 8, 19, or related provisions in any other Annex, when applicable. 4. Identify potential consequential amendments that proposed amendments to Annex 18 may have on other Annexes, PANS, the Technical Instructions, its Supplement, *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481), *Guidance on a Competency-Based Approach to Dangerous Goods Training and Assessment* (Doc 10147), or related provisions in any other ICAO document. 5. Recommend removing or rejecting proposed SARPs that do not contribute to the objectives and principles of Annex 18. 6. Develop and maintain guidance material to support the implementation of Annex 18 SARPs.
Specific working arrangements	A panel member will be appointed as the rapporteur of the working group. The rapporteur will remain impartial and avoid conflicts of interest. The function of the rapporteur is primarily to ensure that the items on the work programme for the specific group are completed in a timely and efficient manner. The rapporteur will report the working group's progress to the DGP along with any recommendations, which may include proposed draft amendments to ICAO provisions. Such reports will be made at a minimum at each full working meeting. The working group will be comprised of panel members, advisors and State observers. It will seek specialized expertise when necessary. The rapporteur will ensure a balanced representation of required expertise. The working group will conduct its work informally. It will coordinate with other DGP working groups and relevant ICAO panels as appropriate. The working group may meet for detailed discussions when required, with ongoing correspondence and work through electronic means. The working group will be assisted by the Secretariat as required.

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DANGEROUS GOODS PANEL WORKING GROUP ON UN HARMONIZATION (DGP-WG/UN Harmonization) **TERMS OF REFERENCE**	
Mission	1) Harmonize ICAO dangerous goods provisions with the UN Recommendations on the Transport of Dangerous Goods with the goal of facilitating intermodal transport while maintaining an acceptable level of safety for air transport 2) Identify areas for which harmonization with the UN Recommendations on the Transport of Dangerous Goods may introduce unacceptable risk to aviation.
Tasks	1. Determine which revisions to the UN Recommendations on the Transport of Dangerous Goods and to the International Atomic Energy Agency's (IAEA) regulations for the safe transport of radioactive material can be incorporated in the Technical Instructions and which revisions need to be modified or rejected to achieve an acceptable level of safety in air transport. 2. Develop recommendations to address elements on ANC job cards and identified anomalies or gaps that apply to multimodal harmonization. 3. Identify potential consequential amendments that the associated proposed amendments to the Technical Instructions may have on Annex 18, the *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU), the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481), or related provisions in any other ICAO document. 4. Develop proposed amendments to the Technical Instructions or other ICAO documents, when applicable, based on the output from Tasks 1, 2, and 3. 5. Maintain the DGP *Guidance for the Panel to Aid in Preparation of the Technical Instructions and Supporting Documents.*
Specific working arrangements	A panel member will be appointed as the rapporteur of the working group. The rapporteur will remain impartial and avoid conflicts of interest. The function of the rapporteur is primarily to ensure that the items on the work programme for the specific group are completed in a timely and efficient manner. The rapporteur will report the working group's progress to the DGP along with any recommendations, which may include proposed draft amendments to ICAO provisions. Such reports will be made at a minimum at each full working meeting. The working group will be comprised of panel members, advisors and State observers. It will seek specialized expertise when necessary. The rapporteur will ensure a balanced representation of required expertise. The working group will conduct its work informally. It will coordinate with other DGP working groups and relevant ICAO panels as appropriate. The working group may meet for detailed discussions when required, with ongoing correspondence and work through electronic means. The working group will be assisted by the Secretariat as required.

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DANGEROUS GOODS PANEL WORKING GROUP ON TRAINING (DGP-WG/Training) **TERMS OF REFERENCE**	
Mission	Ensure training provisions in Annex 18, the Technical Instructions, its Supplement and supporting documents provide a framework necessary for State technical personnel and applicable entities in the air cargo supply chain to perform their dangerous goods functions competently
Tasks	1. Develop recommendations to address elements on ANC job cards and identified anomalies or gaps that apply to training. 2. Ensure proposed provisions align with the principles and terminology provided in Annexes 6, 8, 19, the *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868), or related provisions in any other ICAO document. 3. Develop and maintain guidance material, as necessary, to support the implementation of training provisions. 4. Identify potential consequential amendments that the associated proposed amendments may have on other dangerous goods documents and any provisions in other ICAO documents related to training.
Specific working arrangements	A panel member will be appointed as the rapporteur of the working group. The rapporteur will remain impartial and avoid conflicts of interest. The function of the rapporteur is primarily to ensure that the items on the work programme for the specific group are completed in a timely and efficient manner. The rapporteur will report the working group's progress to the DGP along with any recommendations, which may include proposed draft amendments to ICAO provisions. Such reports will be made at a minimum at each full working meeting. The working group will be comprised of panel members, advisors and State observers. It will seek specialized expertise when necessary. The rapporteur will ensure a balanced representation of required expertise. The working group will conduct its work informally. It will coordinate with other DGP working groups and relevant ICAO panels as appropriate. The working group may meet for detailed discussions when required, with ongoing correspondence and work through electronic means. The working group will be assisted by the Secretariat as required.

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DANGEROUS GOODS PANEL WORKING GROUP ON ENERGY STORAGE DEVICES (DGP-WG/Energy Storage Devices) **TERMS OF REFERENCE**	
Mission	Ensure provisions related to the transport of lithium batteries or other energy storage devices and supporting guidance material enable an acceptable level of safety
Tasks	1. Develop recommendations to address elements on ANC job cards and identified anomalies or gaps that apply to the safe transport by air of lithium batteries or other energy storage devices. 2. Develop proposed amendments to the Technical Instructions, its Supplement, or other ICAO documents, when applicable, based on the output from task 1. 3. Ensure the associated proposed provisions align with the principles and terminology provided in Annexes 6, 8, 19, or related provisions in any other ICAO document.
Specific working arrangements	A panel member will be appointed as the rapporteur of the working group. The rapporteur will remain impartial and avoid conflicts of interest. The function of the rapporteur is primarily to ensure that the items on the work programme for the specific group are completed in a timely and efficient manner. The rapporteur will report the working group's progress to the DGP along with any recommendations, which may include proposed draft amendments to ICAO provisions. Such reports will be made at a minimum at each full working meeting. The working group will be comprised of panel members, advisors and State observers. It will seek specialized expertise when necessary. The rapporteur will ensure a balanced representation of required expertise. The working group will conduct its work informally. It will coordinate with other DGP working groups and relevant ICAO panels as appropriate. The working group may meet for detailed discussions when required, with ongoing correspondence and work through electronic means. The working group will be assisted by the Secretariat as required.

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DANGEROUS GOODS PANEL WORKING GROUP ON THE SUPPLEMENT (DGP-WG/SUPPLEMENT) **TERMS OF REFERENCE**	
Mission	Provide guidance to States that supplements the Technical Instructions or explains in greater depth the SARPs contained in Annex 18.
Tasks	1. Develop and propose guidance to States to support industry in achieving an acceptable level of safety. 2. Develop and propose guidance to assist States in granting approvals and exemptions. 3. Ensure that the Supplement is maintained and kept up to date; 4. Provide input to the DGP *Guidance for the Panel to Aid in Preparation of the Technical Instructions and Supporting Documents.*
Specific working arrangements	A panel member will be appointed as the rapporteur of the working group. The rapporteur will remain impartial and avoid conflicts of interest. The function of the rapporteur is primarily to ensure that the items on the work programme for the specific group are completed in a timely and efficient manner. The rapporteur will report the working group's progress to the DGP along with any recommendations, which may include proposed draft amendments to ICAO provisions. Such reports will be made at a minimum at each full working meeting. The working group will be comprised of panel members, advisors and State observers. It will seek specialized expertise when necessary. The rapporteur will ensure a balanced representation of required expertise. The working group will conduct its work informally. It will coordinate with other DGP working groups and relevant ICAO panels as appropriate. The working group may meet for detailed discussions when required, with ongoing correspondence and work through electronic means. The working group will be assisted by the Secretariat as required.

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