

Part 12 Discussion Paper #2: Scientific, Medical and Industrial Needs

Issue: Dangerous goods need to be transported by air to meet specific industrial needs within Canada; to allow for scientific measurement, and to ensure access to medical aid. The provisions of Part 12 must meet these needs while ensuring the protection of public safety.

Background:

Transportation of dangerous goods by air is essential on a global scale, but the geography of Canada makes the transportation of dangerous goods especially important in a number of areas with particular needs. Dangerous goods used in industries such as mining often need to be transported by air when a mine is not accessible by road. Instrumentation similarly needs to be shipped to remote locations. Finally, patients in need of medical aid must be transported long distances by air, to ensure they have access to the medical care they need.

Part 12 of the *Transportation of Dangerous Goods Regulations* (TDGR) allows those who handle, offer for transport or transport dangerous goods by air within Canada to follow the *International Civil Aviation Association (ICAO) Technical Instructions (TI) for the Safe Transport of Dangerous Goods by Air* or, under particular circumstances, to follow authorizations and requirements under Sections 12.4 – 12.17 that are specific to a Canadian context. A number of these provisions are specific to industrial, scientific and medical needs. These include Section 12.5 on Forbidden Explosives; Section 12.11 on Geological Cores; Section 12.13 on Measuring Instruments; and Section 12.14 on Medical Aid. Transport Canada is considering reviewing these sections to ensure that they are adequately addressing health, scientific, and industrial needs while protecting the safety of Canadians.

Proposals with Regard to Industrial, Medical, and Scientific Needs:

1. Transportation of Forbidden Explosives (Section 12.5)

Part 12.5 of the TDGR allows a person to handle, offer for transport or transport certain explosives that are forbidden for transport under the ICAO TI. These explosives are generally used in the mining industry and in road construction. While it is rare that explosives for road construction need to be transported by air – generally they can be transported by road – other end uses, such as mining, often require transportation by air due to a lack of accessibility by other modes of transport.

While the transportation of these explosives by air is forbidden in international air transport due to their high hazard, they need to be transported by air domestically in Canada to reach

their required destination. However, ensuring that they are transported safely remains essential. Section 12.5 already contains numerous requirements to ensure that these explosives are transported safely, but some modifications may enhance existing safety requirements.

Transport Canada proposes to specify in Section 12.5 that the explosives listed in this section cannot be transported when there are passengers (who are not involved in the work requiring the explosives) present on an aircraft. Furthermore, Transport Canada is considering introducing compatibility requirements for explosives transported by air, based on Part 5, Section 5.7 of the TDGR, and the requirements of the *Explosives Regulations 2013*¹. Transport Canada is also considering reviewing and updating the list of explosives authorized under Section 12.5. Other amendments may be considered to enhance clarity and avoid confusion, such as removing the reference to the packing instructions of the ICAO supplement, which are not relevant for explosives that are forbidden under the ICAO TI.

2. *Scientific Needs (Sections 12.11 & 12.13)*

Two sections of Part 12 are focused on scientific transportation needs: Section 12.11 on Geological Core Samples and Section 12.13 on Measuring Instruments. Transportation of geological cores is needed in the mining and petroleum industries, as well as in geological research. Geological cores can be hazardous and are considered dangerous goods if they contain radioactive materials. However, requirements for the transportation of radioactive materials in Section 12.11, subsection (d), are already address by the *Packaging and Transport of Nuclear Substances Regulations*². Other requirements in Section 12.11 (subsections (a) to (c)) are out of date and no longer relevant. Therefore, Transport Canada is proposing to remove Section 12.11. Those transporting geological cores containing radioactive materials by air will still need to follow the requirements of the *Packaging and Transport of Nuclear Substances Regulations* and of the ICAO TI, unless the level of radioactivity of the cores is sufficiently low to qualify for exemptions.

Part 12.13 on Measuring Instruments contains authorizations and requirements for the transportation of instrumentation by air. A wide variety of instruments may need to be transported by air, including measuring equipment used in activities such as mining,

¹ [Explosives Regulations, 2013](#), SOR 2013-211, made under the *Explosives Act*

² [Packaging and Transport of Nuclear Substances Regulations](#), 2015, SOR 2015-145, made under the Nuclear Safety and Control Act.

meteorology, and research. The ICAO TI contain requirements for the transportation of certain pieces of instrumentation, such as those containing mercury or radioactive materials. However, some of these requirements may not be feasible when transporting instrumentation in a small aircraft, as is often necessary when transporting to difficult to access location within Canada.

Instruments containing radioactive materials, such as nuclear density gauges used in the mining, petroleum, and construction industries are required under the ICAO TI to be separated from the cabin by a minimum distance, which may not be possible on smaller aircraft. Authorizations under 12.13 are therefore required to exempt measuring devices from the separation distances for radioactive instruments under the ICAO TI. However, other requirements under 12.13, such as those regarding activity and radiation levels, are duplicative of requirements under the *Packaging and Transport of Nuclear Substances Regulations*. Transport Canada is proposing to review Section 12.13 to ensure that the existing authorizations and requirements are needed and are not duplicative of those in other federal regulations.

3. *Medical Aid (Section 12.14)*

While air ambulances are exempt from the TDGR, Section 12.14 of the TDGR contains provisions respecting the transportation of dangerous goods by air for medical aid, in an aircraft that is not an air ambulance.

Older editions of the ICAO TI contained exemptions for the transportation of dangerous goods while a patient was present in the aircraft, to ensure accessibility to materials and equipment needed for medical care in flight. However, these editions did not exempt transportation of the dangerous goods before or after the person requiring medical aid was aboard the aircraft. Part 12.14 was created to address this gap. Modifications were made in more recent editions of the ICAO TI (2015 – 2016) to allow dangerous goods to be carried on a flight made by the same aircraft before or after a flight for the purposes of medical aid, when it is impracticable to load or unload the dangerous goods immediately before or after the flight. As a result, Section 12.14 may no longer be needed, with the exception of some minor text to allow dangerous goods to be transferred from one flight to another within the context of medical aid; the ICAO TI only allow for the return of dangerous goods on the same flight. Transport Canada is proposing to review Section 12.14, to account for the update to the ICAO TI, which largely exempts medical aid, subject to some limited requirements with regard to loading, inspection and labeling the dangerous goods.

4. Removal of Section 12.6, Handling and Transporting of Toxic and Infectious Substances

Transport Canada is proposing to remove Section 12.6 of the TDGR as the requirement to separate toxic and infectious substances from animals, foodstuffs or feeds is no longer contained in the ICAO TI. This section is therefore obsolete.