

Part 12 Discussion Paper #4: Aerial Work

Issue: The *Canadian Aviation Regulations (CARs)* and the *Transportation of Dangerous Goods Regulations (TDGR)* both contain provisions for aerial work, as aerial work sometimes requires the use of dangerous goods. Transport Canada (TC) is proposing to modify the scope, authorizations and requirements for aerial work under Section 12.12 of the TDGR to align more closely with those of the CARs.

Background:

Dangerous goods are required for a variety of types of aerial work. *The International Civil Aviation Association (ICAO) Technical Instructions (TI) for the Transportation of Dangerous Goods* contain exemptions for certain types of aerial work. Specifically, the ICAO TI state “these Instructions do not apply to dangerous goods carried by an aircraft where the dangerous goods are [...] for dropping in connection with agricultural, horticultural, forestry, avalanche control, ice jam and landslide clearance or pollution control activities”¹.

According to the CARs, “aerial work” means a commercial air service other than an air transport service or a flight training service. “Air transport service” is defined as “a commercial air service that is operated for the purpose of transporting persons, personal belongings, baggage, goods or cargo in an aircraft between two points”. In comparison, the TDGR do not define aerial work, rather they provide a list of specific activities for which the provisions of Section 12.12 on Aerial Work apply². Although the CARs do not contain such a list, a list of activities is contained in the Air Operator Certificate Application for Aerial Work form³, required under the CARs for operators requesting to conduct aerial work. The table below provides a further comparison of the definitions and provisions for aerial work under the CARs versus the TDGR:

¹ *International Civil Aviation Association (ICAO) Technical Instructions (TI) for the Transportation of Dangerous Goods*, Part 1; 1.1.5.1

² Activities considered aerial work under [Section 12.12 of the TDGR](#): active fire suppression; aerial cloud seeding; aerial drip torching; agriculture; avalanche control; forestry; horticulture; hydrographic or seismographic work; or pollution control.

³ [Form 26-0440](#)

Table 1. Comparison of aerial work definition, scope and requirements under the CARs vs. TDGR

Parameters	CARs	TDGR
Definition of Aerial Work	A commercial air service other than an air transport service or a flight training service	None
Scope	<p>Aerial work under CARs section 702 involves:</p> <p>(a) the carriage on board of persons other than flight crew members ;</p> <p>(b) the carriage of helicopter Class B, C or D external loads;</p> <p>(c) the towing of objects (e.g., banners); or</p> <p>(d) the dispersal of products.</p>	<p>Activities considered “aerial work”⁴:</p> <ul style="list-style-type: none"> • active fire suppression; • aerial cloud seeding; • aerial drip torching; • agriculture; • avalanche control; • forestry; • horticulture; • hydrographic or seismographic work; or • pollution control
Aircraft specifications	Commercial aerial work can be fixed wing and rotorcraft as long as it is done under the requirements for 702 aircraft operations ⁵ . Private operators may under CAR 604 ⁶ if appropriate, also do certain types of aerial work.	Not limited to aircraft operating under section 702 aircraft operations; applies to all operators (commercial or private) and types of aircraft
Requirements for aircraft	Controlled activity by virtue of the issuance of an air operator certificate for 702 or private operations equivalent documents. Authorizations required for activities such as carrying external loads; authorization for a person to leave or enter a helicopter in	None

⁴ Additional types of aerial work are permitted under equivalency certificates, including gas and oil, mining operations, telecommunication, radar station maintenance and repairs, metrology, hydrology, wildlife management, and railway damage preventions and construction.

⁵ 702 aircraft are those operating under the [Canadian Aviation Regulations](#), Subpart 2 of Part 7 (Aerial Work). 702 aircraft operators are issued air operator certificates to conduct aerial work.

⁶ [Canadian Aviation Regulations](#), Subpart 3 of Part 6 (Special Flight Operations). Note that Subpart 604 requires special authorization by the Minister and the operator is required to meet prescribed conditions and limitations for the conduct of aerial work.

Parameters	CARs	TDGR
	flight; among others. Some authorizations must be renewed yearly.	
Requirements for transportation of dangerous goods	None	Requirements for means of containment, training, release reporting, provision of information (documentation)
Prepositioning of dangerous goods included under 'aerial work'?	Depends on the activity. For example, prepositioning of DG may be included for work involving carriage of external load, or dispersal of products, etc.	Yes
Aerial work zone	Aerial work zone certificate required when work is to be conducted in a built up area	No aerial work zones

Proposal for closer alignment with the CARs:

Better alignment of the TDGR with the CARs with regard to aerial work can reduce the burden on air operators who transport dangerous goods and therefore need to follow both the CARs and the TDGR. It could also bring clarity to the differences in scope between the two regulations. To better align with the CARs, TC proposes to make the following changes to Section 12.12 (Aerial Work) of the TDGR:

1. *Limit the applicability of the provisions of section 12.12 of the TDGR to 702 operators⁷ and other operators with an equivalent aerial work certificate issued by Transport Canada (e.g. private operators⁸). Operators intending to conduct aerial work as defined under the CARs must already obtain a 702 certificate, or another aerial work authorization such as authorization as a private operator. Transport Canada proposes to require those transporting dangerous goods under Part 12.12 of the TDGR to have either a 702 certificate or an equivalent aerial work certificate issued by TC. Requiring a 702 certificate or equivalent aerial work authorization issued by TC in order to transport dangerous goods for aerial work will help to align the scope of aerial work under the TDGR with the CARs. It is*

⁷ See Footnote 5.

⁸ A private operator is an operator who has been issued a private operator registration document under SubPart 4 of Part 6 of the [Canadian Aviation Regulations](#).

not expected to add administrative burden, as the requirement for certification under the CARs is already in place.

Frequently, dangerous goods need to be transported by air to a site from which the 702 aerial work will begin. The provisions of Section 12.12 will not apply to this process of transporting dangerous goods to the initial site of the aerial work, but provisions of other sections of Part 12 may apply. For example, if the location from which the aerial work will begin is remote, Section 12.9 may be applicable. See Appendix A for a list of sections of Part 12 which may potentially be followed when transporting dangerous goods to the initial location of the aerial work.

- 2. Limit the dangerous goods that can be transported under 12.12 to those that are necessary for conducting the specific aerial work activity.*

The authorizations for aerial work under the TDGR are intended to apply to the dangerous goods needed for the aerial work, not to dangerous goods that might be transported on the same aircraft for other purposes. By specifying that the provisions of 12.12 only apply to dangerous goods required for the specific aerial work tasking and used at the site of the aerial work, these provisions will become more closely aligned with the CARs while clarifying the conditions under which dangerous goods can be transported under 12.12.

- 3. Removing the list of activities considered to be “aerial work” from Section 12.12*

Currently, Section 12.12 of the TDGR contains a list of activities, considered to constitute “aerial work”, where the authorizations in this section can be applied. The type of activities that are aerial work where dangerous goods are required continues to evolve; as a result, Transport Canada has issued a large number of equivalency certificates for aerial work. Maintaining an up-to-date list of authorized activities is a challenge, and applying for equivalency certificates is burdensome to stakeholders as well as to Transport Canada. Furthermore, there can be disagreement about the scope and definition of the authorized activities. Given that the CARs already contains a definition of aerial work and requires certification for operators to conduct aerial work, a list of activities that are aerial work under the TDGR is unnecessary, and may potentially be inconsistent with the CARs. Therefore Transport Canada proposes to remove the list of activities, and instead to limit the use of the provisions under 12.12. as explained above (points 1 and 2).

Other proposed amendments:

Transport Canada is also proposing to review Section 12.12 to ensure that the provisions are up-to-date. For example, the required means of containment for dangerous goods – other than those that are an integral part of the aircraft – will be reviewed to ensure they reflect the current needs of aerial work operators while ensuring the safe transportation of dangerous goods.

Appendix A. Table of Aerial Work subject to Part 12.12 of TDGR, aerial work under the CARs, exempted under the ICAO TI, and sections of the TDGR that may be followed when transporting dangerous goods to the location where the aerial work is to take place.

Areas currently under Section 12.12 of the TDGR + activities with equivalency certificates	Corresponding Meaning of “Aerial Work” under CARs	Possible Corresponding Activity under CARs Air Operator Certificate	Exemptions under ICAO TI for “dropping in connection with...activities”	Other Potentially Applicable Sections of Part 12 (e.g. to preposition DG or transport them to the location of the aerial work)
Active fire suppression	○ Dispersal of product	○ Fire Fighting ○ Forest Fire Management	○ Forestry	12.1 12.9 Limited Access
Aerial cloud seeding	○ Dispersal of product	○ Aerial Spraying	n/a	12.1 12.9 Limited Access
Aerial drip torching	○ External load	○ Forest Fire Management ○ External load	○ Forestry	12.1 12.9 Limited Access
Agriculture	○ Dispersal of product	○ Aerial Spraying	○ Agricultural	12.1
Avalanche control	○ Dispersal of product ○ Carriage on board of persons other than the flight crew members	○ No corresponding activity under 702 air operator certificate but would be authorized as aerial work, given the specialized nature of the activity	○ Avalanche Control	12.1 12.5 Forbidden Explosives 12.9 Limited Access
Forestry	○ Carriage on board of persons other than the flight crew members ○ Dispersal of product	○ Forest Management	○ Forestry	12.1 12.9 Limited Access
Horticulture	○ Dispersal of product	○ Aerial Spraying	○ Horticultural	12.1 12.9 Limited Access
Seismographic or Hydrographic Work	○ External load ○ Carriage on board of persons other than the flight crew members	○ Aerial Surveying ○ External load	n/a	12.1 12.9 Limited Access
Pollution control	○ Dispersal of product (?)	○ Aerial Spraying	○ Pollution control	12.1

Areas currently under Section 12.12 of the TDGR + activities with equivalency certificates	Corresponding Meaning of “Aerial Work” under CARs	Possible Corresponding Activity under CARs Air Operator Certificate	Exemptions under ICAO TI for “dropping in connection with...activities”	Other Potentially Applicable Sections of Part 12 (e.g. to preposition DG or transport them to the location of the aerial work)
		○ Aerial Surveying		12.9 Limited Access
Gas and oil	○ External load	○ External Load	n/a	12.1 12.5 Forbidden Explosives 12.9 Limited Access
Mining operations	○ External load	○ Aerial Surveying ○ Aerial Mapping ○ External Load	n/a	12.1 12.5 Forbidden Explosives 12.9 Limited Access 12.13 Measuring Instrument
Telecommunications	○ External load	○ Aerial Construction ○ External load	n/a	12.1 12.9 Limited Access
Radar station maintenance and repairs	○ External load ○ Authorize a person to enter or leave a helicopter in flight	○ Aerial Construction ○ External load	n/a	12.1 12.9 Limited Access
Metrology	○ Carriage on board of persons other than the flight crew members	○ Aerial Surveying	n/a	12.1 12.9 Limited Access
Hydrology	○ Carriage on board of persons other than the flight crew members	○ Aerial Surveying	n/a	12.1 12.9 Limited Access
Wildlife management	○ External load ○ Authorize a person to enter or leave a helicopter in flight	○ Wild Life Management ○ External load	n/a	12.1 12.9 Limited Access
Railway damage prevention and construction	○ External load	○ Aerial construction ○ External load	n/a	12.1 12.9 Limited Access

Appendix B. Aerial Work Definitions from the North American Free Trade Agreement (NAFTA)⁹.

The following is a list of specialty air services definitions identified by NAFTA and agreed upon by the three Civil Aviation Authorities. NAFTA's specialty air services are specialized commercial aviation operations performing any of the following:

Aerial Advertising. *The operation of an aircraft for the purpose of skywriting, banner towing, displaying airborne signs, dispensing leaflets, and making public address (PA) announcements.*

Aerial Construction. *The operation of a helicopter for the purpose of external-load operations in support of construction, hoisting of utilities, power line construction, and erecting special-purpose towers.*

Aerial Inspection or Surveillance. *The operation of an aircraft for the purpose of conducting aerial observations and patrols of surface events and objects. If an operator is seeking to perform activities related to wildlife management, it is considered to be aerial inspection and surveillance.*

Aerial Mapping. *The operation of an aircraft for the purpose of mapping by means of a camera or other measuring and recording devices.*

Aerial Photography. *The operation of an aircraft for the purpose of taking photographs or recording information by means of a camera or other measuring and recording devices.*

Aerial Sightseeing. *The operation of an aircraft for the purpose of providing recreation to passengers. This originates and terminates at the same airport or the same aerodrome.*

⁹ Available from: <https://www.tc.gc.ca/media/documents/ca-standards/nafta.pdf>

Aerial Spraying. *The operation of an aircraft for the dispersal of products for the benefit of agriculture, horticulture, public health, or forestry. This does not include the dispensing of live insects.*

Aerial Surveying. *The operation of an aircraft for the purpose of surveying by means of a camera or other measuring and recording devices.*

Firefighting. *The operation of an aircraft for the purpose of dispensing water, chemicals, and fire retardants intended for suppressing a fire. This includes carrying firefighters from base camp to base camp or base camp to the work zone.*

Flight Training. *Training provided by certified flight schools and flight training operators who follow an approved ground and flight syllabus, which permits students to meet all certification requirements for obtaining an airman certificate or rating. This also includes operational training provided by SAS operators.*

Forest Fire Management. *The operation of an aircraft for the purpose of fire detection and control, as well as dispensing any substance intended for forest fire suppression and prevention. This includes carrying firefighters, fire bosses, and/or managers from the base camp into the fire area or the actual fire site, as well as within the same work zone.*

Glider Towing. *The towing of a glider by a powered aircraft equipped with a tow hitch.*

Heli-Logging. *The operation of an aircraft for the purpose of transporting timber suspended from the fuselage.*

Parachute Jumping. *The operation of an aircraft for the purpose of allowing a person to descend from that aircraft in flight using a parachute during all or part of that descent.*