Explanatory Statement

Civil Aviation Act 1988

Civil Aviation Order 20.9 Amendment Instrument 2011 (No. 1)

Purpose
The purpose of this Civil Aviation Order amendment (***CAO amendment***) is to modify a safety rule in relation to the precautions to be taken during the fuelling of aircraft.

Legislation
Section 98 of the *Civil Aviation Act 1988* (the ***Act***) empowers the Governor-General to make regulations for the Act and the safety of air navigation.

Legislation for CAO amendment
Under subsection 98 (5) of the Act, the regulations may provide that CASA may issue a Civil Aviation Order (***CAO***) containing a direction.

Under subregulation 98 (5AAA) of the Act, a CAO issued under a regulation made under subsection 98 (5) of the Act, is a legislative instrument.

Regulation 5 of CAR 1988 provides that wherever CASA is empowered to issue a direction CASA may, unless the contrary intention appears, issue the direction in a CAO.

Under subregulation 235 (7) of the *Civil Aviation Regulations 1988* (***CAR 1988***), CASA may, for the purpose of ensuring the safety of air navigation, give directions with respect to the method of loading persons and goods, *including fuel*, on aircraft.

CAO 20.9 deals, among other things, with precautions in fuelling in air service operations. Using the powers outlined above, CASA has chosen to give relevant directions concerning the loading of fuel in subsection 4 of CAO 20.9.

Paragraph 4.3.4 of CAO 20.9 provides that an aircraft, and all items of fuelling equipment, are to be connected in such a way as to ensure that they are of the same electrical potential.

The paragraph states that where a suitable earth point is available at the fuelling site, both the aircraft and the equipment are to be effectively connected to that earth point.

Subparagraph (a) in paragraph 4.3.4, goes on to mention that where a fuelling operation is performed by a barge to a seaplane, the barge is to be effectively connected to the aircraft in such a way as to ensure that the barge, the fuelling equipment and the aircraft are at the same electrical potential.

Background
Pumping highly refined products such as jet fuel or aviation gasoline (Avgas) for aircraft fuelling generates static electricity. However, the practice of earthing fuelling equipment as a means of dealing with this is no longer considered to be a state-of-the-art practice in aircraft fuelling.

Many fuelling operations no longer follow the earthing practice. It is thought that electrical currents from aircraft devices (for example, auxiliary power units) should not be allowed to run through fuelling vehicles to earth but rather through separate earth paths away from fuel sources, which is not practical for fuelling vehicles.

When fuelling operations cause differences in electrical potential between a fuelling vehicle (or other fuelling equipment) and the aircraft, bonding is considered to be the optimal method to allow equalization of electrical charges between the aircraft and the vehicle (or other equipment).

Bonding is the process of providing electrical continuity between the fuelling vehicle and the aircraft. This avoids the build-up of differences in electrical potential. It is such differences which give rise to the risk of release through a static spark which is "hot" enough to ignite fuel vapour in the right concentration. Fuel vapour is invariably present during fuelling operations.

The Australasian Aviation Ground Safety Council Incorporated (the ***AAGSC***), in its Recommended Industry Practice (***RIP***) for working around aircraft during fuelling (RIP No. 22, issue 1, 1 November 2009), has highlighted the importance of correct bonding in fuelling operations.

AAGSC has also alerted to the need to ensure that if the bonding wire is inadvertently disconnected from either the aircraft or the fuelling vehicle (or other fuelling equipment) the fuelling operation should be stopped until bonding is re-established. In practice, a short period must be allowed before reconnecting the bonding wire — this is to allow for the dissipation of static electricity that may have built up.

The CAO amendment
In essence, the CAO amendment provides that when fuelling an aircraft, before a fuel tank cap is removed, the aircraft and all fuelling equipment must be bonded, and if bonding is lost, fuel transfer must be stopped immediately and not resumed until the bond is restored.

A Note states that if bonding is lost care must be taken before reconnecting the bonding wire to allow for the dissipation of any static electricity that may have built up.

Details of the CAO amendment are set out in Appendix 1.

Legislative Instruments Act 2003 (the *LIA*)
As noted above, under subregulation 98 (5AAA) of the Act, a CAO issued under a regulation made under subsection 98 (5) of the Act, is a legislative instrument. The CAO amendment is, therefore, a legislative instrument subject to tabling and disallowance in the Parliament under sections 38 and 42 of the LIA.

Consultation
Consultation under section 17 of the LIA has been undertaken in this case as follows. CASA established Project OS 11/06 and then posted details of the proposed CAO amendment to the CASA website. Here it was available for review and comment by the public and the Standards Consultative Committee (the SCC), a joint CASA/aviation industry consultative forum. Consultation closed on 23 May 2011 and comments received were taken into account, in particular to clarify a definition.

Office of Best Practice Regulation (*OBPR*)
OBPR does not require preparation of a specific Regulation Impact Statement (***RIS***) because a preliminary assessment of business compliance costs indicates that the CAO amendment will have only a nil to low impact on business.

Commencement and making
The CAO amendment comes into effect on the day after it is registered.

The instrument has been made by the Director of Aviation Safety, on behalf of CASA, in accordance with subsection 73 (2) of the Act.

[*Civil Aviation Order 20.9 Amendment Order 2011 (No. 1)*]

Details of the CAO amendment

1 Name of instrument

Under this section, the instrument is the *Civil Aviation Order 20.9 Amendment Instrument 2011 (No. 1)*.

2 Commencement

Under this section, the instrument commences on the day after it is registered.

3 Amendment of *Civil Aviation Order 20.9*

Under this section, Schedule 1 amends *Civil Aviation Order 20.9*.

Schedule 1 Amendments

[1] Paragraph 4.3.4

This amendment substitutes new paragraphs 4.3.4 and 4.3.4A for the previous provision.

4.3.4 The paragraph provides in effect that in fuelling an aircraft, before a fuel tank cap is removed, the aircraft and all fuelling equipment must be bonded; and that if bonding is lost, fuel transfer must be stopped immediately and not resumed until the bond is restored.

A Note states that care must be taken before reconnecting the bonding wire to allow for the dissipation of static electricity that may have built up.

4.3.4A This paragraph defines 3 terms used in the amendment:

bonded means the aircraft and the fuelling equipment have the same electrical potential; and

fuelling, includes fuelling and defuelling; and

fuelling equipment includes mobile fuel tankers, in-ground refuel ports, fuel bowsers, hand pumps, drums, funnels and other loose items of equipment if these are used in the fuelling operation.