

Explanatory Statement

Civil Aviation Safety Regulations 1998

Prescribed Qualification Standards for FSTD (MCC Training — Helicopter) Instrument 2019 (Edition 1)

Purpose

This instrument prescribes qualification standards for flight simulation training devices (*FSTDs*) for use in multi-crew cooperation (*MCC*) training for helicopters. It is made for the purpose of relevant provisions in Part 61 of the *Civil Aviation Safety Regulations 1998 (CASR)*.

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.

Under paragraph 98 (5A) (a) of the Act, regulations made for that provision may empower CASA to issue instruments in relation to matters affecting the safe navigation and operation of aircraft. Under subsection 98 (5AA) of the Act, an instrument issued under paragraph 98 (5A) (a) is a legislative instrument if expressed to apply in relation to a class of persons, aircraft or aeronautical parts, rather than to a particular person, aircraft or part.

Part 61 of CASR, made under the Act, provides for the safety regulation of flight crew licensing. Regulation 61.010 defines a *flight simulation training device* as including “(d) a device that meets the qualification standards prescribed by a legislative instrument under regulation 61.045” of CASR.

Regulation 61.045 of CASR provides that, for paragraph 98 (5A) (a) of the Act, CASA may, by legislative instrument, “prescribe qualification standards for flight simulation training devices”.

A flight simulator that is qualified by CASA under Part 60 of CASR could be used for MCC training if it meets the standards set out in such a legislative instrument and its use otherwise meets the requirements of Part 61. MCC training also constitutes an element of Part 142 flight training under paragraph 142.015 (2) (c) of CASR that only a Part 142 operator may conduct, and to whose relevant FSTD the standards in the legislative instrument will apply for this purpose.

The legislative instrument

The legislative instrument prescribes the qualification standards for FSTDs that are to be used in MCC training for helicopters. This is the flight training that is required for a person to conduct a flight in a helicopter as a multi-crew operation, or to qualify for an air transport pilot licence with a helicopter category rating.

The FSTD standards in the legislative instrument apply for an FSTD designed to simulate a multi-crew helicopter. This is a turbine-powered multi-engine helicopter that is equipped for multi-crew operations under the instrument flight rules (IFR), can simulate an engine failure, during the take-off, en route and landing phases of an operation, in a way that is identifiable by an flight crew member (*FCM*), and has appropriate checklists and procedures describing what an FCM must do in order to manage such an engine failure.

The standards in the instrument are technical and detailed. Appendix 1 contains a short summary.

Legislation Act 2003 (the LA)

As noted above, the instrument is made “for paragraph 98 (5A) (a) of the Act”.

Under subsection 98 (5AA) of the Act, an instrument issued under paragraph 98 (5A) (a) is a legislative instrument if expressed to apply in relation to a class of persons. The instrument applies to the class of persons constituted by would-be manufacturers and operators of FSTD which must comply with the Part 61 standards if they are to be used for Part 61 purposes in relation to helicopter MCC training.

In addition, regulation 61.045 expressly states that the instrument is to be a legislative instrument. Under subsection 8 (2) of the LA, if a law gives power to do something by a legislative instrument, then the thing must be done by an instrument and that instrument is a legislative instrument.

Finally, under subsection 8 (4) of the LA, an instrument made under delegated parliamentary powers is, in effect, taken to be a legislative instrument if it determines the law or alters the content of the law, and it directly or indirectly affects rights or obligations. The instrument creates new compliance standards for FSTDs and their operators and these standards must be complied with for the purposes of MCC training in a helicopter.

On all of these grounds, therefore, the instrument is a legislative instrument subject to registration, and tabling and disallowance in the Parliament, under sections 15G, and 38 and 42, of the LA.

Consultation

The standards for helicopter FSTDs used for MCC training were developed in direct consultation with prospective training providers who already operated similar FSTDs, and with manufacturers and distributors of less sophisticated FSTDs.

The goal was to create proposed minimum standards that define an FSTD in which the practical elements of an approved course of MCC training can be conducted.

Once developed in draft, the proposed standards were published by CASA on its Consultation Hub from 28 February to 28 March 2019 (Project number FS 14/15) and feedback sought from industry.

A total of 9 submissions were received in response, of which 6 were published (with consent) on the CASA website. Of the 9 respondents, 1 was not associated with a training provider or an instructor. Six of the respondents supported the proposed minimum standards, and 2 objected on the basis that a device did not need to simulate a multi-engine helicopter as multi-crew operations can be conducted in a single-engine helicopter.

On the objections, CASA took the view that the proposed standards would enable the development of more complex training scenarios that would be more representative of the types of helicopter typically used by industry in multi-crew operations to teach and demonstrate realistic multi-crew non-technical skills.

Office of Best Practice Regulation (OBPR)

OBPR considered that the impact of the instrument will be minor and made the assessment that no RIS was required: OBPR id. 25556.

Statement of Compatibility with Human Rights

The Statement in Appendix 1 is prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*. It indicates that, although the instrument may negatively engage, both directly and indirectly, certain of the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*, it does so in a reasonable, necessary and proportionate way so that it is compatible with those rights and freedoms. By also enhancing aviation safety through significant reductions in trainee exposure to in-flight risks, the instrument also positively engages the right to life in a potentially dangerous aviation activity.

Commencement and making

The legislative instrument commences on the day after it is registered. It has been made by the Acting Director of Aviation Safety, on behalf of CASA, in accordance with subsection 73 (2) of the Act.

Prescribed Qualification Standards for FSTD (MCC Training — Helicopter) Instrument 2019 (Edition 1)

1 Name

This section names the instrument as the *Prescribed Qualification Standards for FSTD (MCC Training — Helicopter) Instrument 2019 (Edition 1)*.

2 Commencement

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

3 Definitions etc.

This section defines key terms and expressions used in the instrument. For example:

MCC training means an approved course of training in multi-crew cooperation.

model, in relation to an FSTD, means a particular simulation functionality of the device. For example, the flight dynamics model of an FSTD is the functionality of the device to simulate the flight dynamics of a multi-crew helicopter in a particular environment.

multi-crew helicopter means a turbine-powered multi-engine helicopter that meets all of the following requirements:

- (a) is equipped for multi-crew operations under the IFR;
- (b) can simulate an engine failure, during the take-off, en route and landing phases of an operation, in a way that is identifiable by an FCM;
- (c) has appropriate checklists and procedures describing what an FCM must do in order to manage such an engine failure.

A Note explains that the standards in this instrument are those which a device must meet to be suitable as an FSTD for MCC training for a multi-crew helicopter as defined.

The standards are for simulations generic to a turbine-powered multi-engine helicopter that meets the requirements mentioned in paragraphs (a) to (c). The standards are not otherwise helicopter-type specific.

The effect of the definition of a multi-crew helicopter is that the device must be capable of simulating an engine failure and its consequences in a range of circumstances, and simulating the effects of FCM inputs to manage the engine failure.

simulate means to reproduce, at least in all essential respects, the generic actions and reactions of a multi-crew helicopter, and its systems and equipment, when on the ground or in flight, including associated noise and external environmental effects.

4 Application

Under this section, the requirements set out in Schedule 1 are prescribed as qualification standards for an FSTD to be used for MCC training for a multi-crew helicopter. A Note explains that ***flight simulation training device*** is defined in paragraph (d) of the definition of that expression in regulation 61.010 of CASR.

Schedule 1 Qualification standards for an FSTD used for MCC training for a multi-crew helicopter

Schedule 1 sets out the qualification standards for an FSTD to be used for MCC training for a multi-crew helicopter.

- 1 Flight deck or cockpit layout and structure**
 Clause 1 lists in detail the requirements for the flight deck or cockpit layout and structure of the FSTD.
- 2 Flight dynamics model (aircraft and engines)**
 Clause 2 sets out in detail the simulation requirements for the flight dynamics model of the FSTD, including the various combinations of airspeed and power that are normally encountered in the flight of a multi-crew helicopter.
- 3 Ground reaction and handling**
 Clause 3 sets out the ground reaction and ground handling requirements of the FSTD, including taxiing.
- 4 Helicopter systems**
 Clause 4 sets out the range of helicopter system simulation requirements for the FSTD, so that systems simulate, for example, normal, non-normal and emergency operating procedures, instrument indications, communication, navigation and warning systems, anti-icing systems, and traffic collision avoidance and terrain awareness warning systems where these are fitted.
- 5 Flight control forces and control travel**
 Clause 5 sets out the FSTD simulation requirements for flight control forces, including a cyclic control trim system, flight control travel that simulates a multi-crew helicopter, and simulated multi-crew helicopter reactions to flight crew actions.
- 6 Sound cues**
 Clause 6 provides that FSTD flight deck sounds in the device resulting from pilot actions or helicopter system malfunctions must simulate those of a multi-crew helicopter responding to the same actions or malfunctions.
- 7 Visual display cues**
 Clause 7 sets the simulation standards for visual displays in the FSTD, including their quality, brightness, contrast, their visual display field of view (FOV), and FCM proximity. Visual displays must be capable of producing the same changes to runway or HLS perspective as arise in a multi-crew helicopter from changes to its height during certain manoeuvres.
- 8 Motion cues — Reserved**
 To avoid doubt, a Note in clause 8 indicates that there is no requirement for motion cues.

9 Air traffic control environment simulation

Under clause 9, the FSTD must be capable of generating at least 1 simulated automated airport weather reporting message of an Automated Terminal Information Service (ATIS) broadcast.

10 Navigation environment — replication of real-world operations

Under clause 10, FSTD's navigation data and corresponding landing approach facilities must be capable of supporting accurate scenario-based training designed to simulate operations in the environment of specific, real-world, locations. The navigation database must include instrument approach procedures for simulated operations at no fewer than 5 different, real-world locations that support instrument approach operations.

11 Atmosphere and weather environment

Under clause 11, the FSTD must be able to simulate a range of atmospheric conditions as they would affect a multi-crew helicopter. The instructor must be able to adjust the visual display to produce changes to cloud base and visibility during a simulated flight.

12 Airports and terrain

Under clause 12, the FSTD's navigation database must contain correct terrain modelling and runway orientation for simulated aerodrome operations, including accurate portrayal of the horizon. Representative scenery for at least 3 different, specific, real-world, aerodromes must be included as they each appear under daylight, twilight and night illumination. Visual system simulation requirements for a range of scenarios are also set out in detail.

13 Miscellaneous

Clause 13 sets out a series of miscellaneous requirements for instructor stations computer capacity maintenance and inspections and operations manuals.

Statement of Compatibility with Human Rights

*Prepared in accordance with Part 3 of the
Human Rights (Parliamentary Scrutiny) Act 2011*

Prescribed Qualification Standards for FSTD (MCC Training — Helicopter) Instrument 2019 (Edition 1)

This legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011* (the **HR(PS) Act**).

Overview of the legislative instrument

This instrument prescribes qualification standards for flight simulation training devices (**FSTDs**) for use in multi-crew cooperation (**MCC**) training for helicopters. It is made for the purpose of relevant provisions in Part 61 of the *Civil Aviation Safety Regulations 1998* (**CASR**).

Regulation 61.010 of CASR defines a **flight simulation training device** as including “(d) a device that meets the qualification standards prescribed by a legislative instrument under regulation 61.045” of CASR.

Regulation 61.045 of CASR 1998 provides that CASA may, by legislative instrument, “prescribe qualification standards for flight simulation training devices”.

The legislative instrument prescribes the qualification standards for FSTDs that are to be used in MCC training for helicopters. This is the flight training that is required for a person to conduct a flight in a helicopter as a multi-crew operation, or to qualify for an air transport pilot licence with a helicopter category rating.

These requirements are consistent with Australia’s obligations of conformity to the Chicago Convention on International Civil Aviation, its Protocols and Annexes.

Human rights implications

The instrument engages some human rights protections as follows.

Article 6 of the International Covenant on Civil and Political Rights (ICCPR)

Under Article 6 of the ICCPR, persons have a right to life, an important element of which is the right to be protected from accidental death by the presence and operation of a legal framework for effective deterrence against preventable accidents.

The instrument’s prescriptions of high qualification standards for FSTDs for MCC training for helicopters are expressly designed to protect life — primarily, the lives of trainee pilots who may be trained to a very high degree of competence in sophisticated simulated flying environments without facing in-flight risks to the trainee and his or her flying instructor.

To this extent, the instrument promotes the right to life and the right to safe and healthy working conditions for aviators.

Articles 6, 7 and 8 of the ICCPR

Under Articles 6, 7 and 8 of the ICCPR, a person has a right to work. The introduction of the standards for operators of relevant FSTDs may qualify that right for persons whose FSTD fails to meet the requisite standards.

To the extent that certain FSTDs may not comply with the new standards, it might be said that the right to work is engaged for owners of non-compliant devices since they cannot provide relevant flight training. However, such an outcome would arise solely from the requirements of aviation safety.

Given the significance of FSTDs, MCC helicopter training as a substitute for what would otherwise have to be in-flight training, lesser standards would diminish the quality of the simulated environment, and hence of the range, scope and quality of the training it would deliver. For this reason, the prescribed requirements are considered to be reasonable, necessary and proportionate to protect aviation safety in Australia.

Conclusion

While the instrument may engage certain of the applicable rights or freedoms recognised or declared in the international instruments listed in section 3 of the HR(PS) Act, it does so in a lawful, reasonable and proportionate way with the intention of promoting the right to life through aviation safety. As such, the instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the HR(PS) Act.

Civil Aviation Safety Authority