

Explanatory Statement

Civil Aviation Regulations 1988

Civil Aviation Safety Regulations 1998

Part 61 Manual of Standards Amendment Instrument 2021 (No. 1)

Purpose

The main purpose of the instrument is to amend Schedules 2, 3 and 5 to the Part 61 Manual of Standards (**Part 61 MOS**) by changing the flight training for pilots being instructed in the avoidance and control of stall and spin and controlled flight at critically low airspeed.

Legislation

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

Relevantly the Governor-General has made the *Civil Aviation Safety Regulations 1998* (*CASR*) and the *Civil Aviation Regulations 1988* (*CAR*).

Flight training requirements

Part 61 of CASR contains regulations for flight crew licensing, including the various requirements for issuing flight crew licences, ratings and endorsements.

Under regulation 61.035 of Part 61, CASA may issue a Manual of Standards for Part 61 that sets out matters relating to flight crew licences.

In particular, the Part 61 MOS may set out standards for the following:

- aeronautical and other knowledge required by this Part for the grant of a licence, rating or endorsement;
- flight training;
- other training and development requirements;
- flight tests;
- general operating competencies for:
 - aircraft of a particular class or type; and
 - activities authorised by operational ratings and endorsements;
- competencies for glider pilot licences.

Under regulation 61.195 of Part 61 an applicant must receive training in the specified units of competency mentioned in the Part 61 MOS and be assessed as competent.

Under regulation 61.235 of Part 61 certain requirements, including flight training, must be satisfied by an applicant for a flight crew licence for the applicant to be eligible to attempt the flight test.

Under regulation 61.250 of Part 61, the applicant must be assessed as satisfying the standards specified in the Part 61 MOS in order to be eligible for the flight crew licence.

Background

The Australian Transport Safety Bureau (*ATSB*) identified issues relating to flight training where aircraft that were not certified for certain manoeuvres related to advanced stalling and spinning were being used in training for those manoeuvres. This was in part caused by confusion concerning the meaning of the terms used to describe the manoeuvres, in particular in relation to what was involved in the inducing and control of what was referred to as “incipient spin”. As a result the ATSB issued *Safety Notice AO-2017-096-SAN-012*.

In response CASA published advisory circular *AC 61-16 VI.0* in which it proposed changes to flight training and changes to terminology used to describe the relevant training practices and knowledge standards. Following consultation on the issues raised, it is now intended to update the training practices and knowledge standards, as set out in Schedules 2, 3 and 5 of the Part 61 MOS.

The changes will be consistent with standards for the grant of flight crew licences as prescribed in Annex 1 —Personnel Licensing, issued by ICAO under the Chicago Convention, and by various National Aviation Authorities (*NAA*). These ICAO and NAA standards require an applicant for a pilot licence with an aeroplane category rating to complete dual training in flight at critically low airspeed, as well as recovery from incipient and full stall. The induction and subsequent recovery from a spin at the incipient stage has been removed except in relation to gliders and to specific ratings and endorsements issued for spinning and instruction in spinning.

The move away from spinning training to training in the handling of aircraft at critically low airspeed is due to the high accident rate in spin recovery training in comparison to the perceived benefits. The emphasis will be on stall recovery training and spin avoidance, focusing on the accurate use of controls in slow flight to avoid the flight conditions conducive to spinning, rather than deliberately inducing spin to subsequently demonstrate recovery. New Zealand, the United States and Canada are among the NAA who have adopted that approach. As a result, problems are avoided that arise from the use of aircraft in spin training that are not certified for intentional spinning and also from the giving of spin training by unqualified instructors, due to that training being regarded as part of the normal training process.

This was a problem that arose under the Part 61 MOS. The team conducting the CASA review found a lack of a clear definition of “incipient spin”, with many resulting interpretations and many operators and pilots believing that the manoeuvre could be conducted in aeroplanes that had not been certified or approved for spinning. References to incipient spin have therefore been replaced by references to wing drop at the stall, a component of a stall at an advanced state, but a precursor to the onset of spin.

It is considered that the proposed amendments will clear away the misunderstandings, and lead to safer practices in giving instruction in aircraft control, leaving the practice of spinning in the hands of instructors qualified to give that instruction and using aircraft suitable for the purpose.

Glider advanced manoeuvres (spin at the incipient phase)

An exception to the general rule has been made in the case of gliders. A glider often operates intentionally close to the stall, in particular during turning flight required to stay within the area of thermal activity necessary for the glider to gain height. Training in the recognition of and recovery from spin at the incipient phase (a term preferable to “incipient spin”) is therefore well understood and within the normal operating procedures of gliders, rather than an exceptional circumstance. In the case of a stall out of a turn in a thermal, it will allow the pilot to recover, having regard to the height at which such stalls occur, with little danger of serious consequences.

Overview of instrument

The instrument is intended to avoid the unnecessary taking of risks in the conduct of stall and spin training. It avoids risky manoeuvres that were engaged in, often without adequate instruction, and with unsuitable training aircraft. Such training may continue to be given, but only by suitably qualified instructors and in properly certified aircraft.

The instrument also replaces reference to the words ‘incipient spin’ with the words ‘spin at the incipient stage’ to better define that portion of the spin, and to prevent the words ‘incipient spin’ being taken to mean ‘wing drop at the stall’, its precursor, and part of a developed stall, rather than part of a spin.

Content of instrument

Section 1 names the instrument.

Section 2 sets out when the instrument commences.

Section 3 states that Schedule 1 amends Schedules 2, 3 and 5 to the Part 61 Manual of Standards.

Schedule 1 Amendments

Item 1 replaces paragraphs (b) to (g) of Section 4, unit A3, subclause 2.5 (A3.5—Control aeroplane at slow speeds) in Schedule 2. The new paragraphs do not contain references to spin, but refer to the avoidance of stall, with, among other things, smooth, coordinated control inputs and the application of power as necessary.

Item 2 replaces subclauses 2.1 and 2.2 of, Section 4, unit A5 (Aeroplane advanced manoeuvres) in Schedule 2 with 2 new subclauses: subclause 2.1 (containing A5.1 – Enter and recover from stall), and subclause 2.2 (containing A5.2 – Avoid spin).

The new provisions contain wording better suited to the new policy which is the avoidance of loss of control at the stall and emphasis on better control of the aircraft at slow speed. The focus is on avoiding the onset of stall by dealing effectively with the initial symptoms, as well as dealing with the onset of stall if it does occur.

Item 3 inserts a reference to the “centre of gravity position” immediately after the reference to “weight” in subparagraph (b) (iii) of clause 4 of unit A5 in Schedule 2.

This is another factor in ensuring the proper loading of an aeroplane, which has a direct effect on stability.

Item 4 omits paragraph (g) of clause 4 of unit A5 in Schedule 2. The “hazards of unbalanced flight” which it refers to are already adequately dealt with in the other provisions of clause 4.

Item 5 replaces an incorrect reference in subparagraph 2.9(d) (ii) of unit TR-SEA (Type rating – single-engine aeroplane) in Schedule 2. “AOC” (*Air Operator’s Certificate*) is replaced by “AOA” (*Angle of Attack*).

Item 6 omits the word “further” from subparagraph 2.9 (d) (iii) of unit TR-SEA (Type rating – single-engine aeroplane), in Schedule 2. The requirement now is to avoid “yaw” rather than “further yaw”. The emphasis is on early correction.

Item 7 substitutes a subparagraph 2.9 (d) (v) in unit TR-SEA (Type-rating – single-engine aeroplane) in Schedule 2. The new sub-paragraph refers to “balanced aileron control”, instead of “aileron control”. The emphasis being on correct use of rudder to balance any aileron input.

Item 8 substitutes a new subparagraph 2.1 (d) (i) in unit FR-SEAC (single-engine aeroplane class rating flight review) in Schedule 2. The new subparagraph replaces a reference to the “incipient stage of a stall” with reference to “the initial symptoms of a stall”. This is consistent with the chosen policy of anticipating and preventing, rather than having to correct, any loss of control. It also reduces the frequency of reference to the word ‘incipient’ so that it has only one context of use and meaning throughout the Part 61 MOS.

Item 9 substitutes a new subparagraph 2.1 (d) (i) in unit FR-MEAC (Multi-engine aeroplane class rating flight review) in Schedule 2.

The new subparagraph contains the same wording as the new subparagraph referred to in item 8. It is substituted for the same reason.

Item 10 substitutes a subparagraph 2.1 (d) (i) in unit FR-MEAT (Multi-engine aeroplane class rating flight review) in Schedule 2

The new subparagraph contains the same wording as the new subparagraphs referred to in items 8 and 9. It is substituted for the same reason.

Item 11 substitutes a subparagraph 2.1 (c) (i) in unit G5 (Glider advanced manoeuvres) in Schedule 2

The new subparagraph replaces a reference to the “incipient stage of a stall” with reference to “the initial symptoms of a stall”. This is consistent with the chosen policy of anticipating and preventing, rather than having to correct, any loss of control. It also reduces the frequency of reference to the word ‘incipient’ so that it has only one context of use and meaning throughout the Part 61 MOS.

Item 12 substitutes a new subclause 2.2 for the existing subclause 2.2 in unit G5 (Glider advanced manoeuvres) in Schedule 2. It replaces some of the wording, with “incipient spin” being replaced with “spin at the incipient phase”. This clarifies the phase of spin from which the glider must recover, and renders the use and context of the word ‘incipient’ consistent throughout the amended provisions. The wording of paragraphs 2.2 (a), (b) and (c) have all been changed for the same reason.

However, as mentioned previously under the subheading *Glider advanced manoeuvres (spin at the incipient phase)* the policy in regard to gliders is to continue to practise recovery from spin, though the emphasis is on intervention at an earlier stage.

Item 13 substitutes a paragraph 2.3 (a) in unit G5, clause G5.3— Recover from spiral dive in Schedule 2.

The new subparagraph refers to a spiral dive rather than “incipient spin”. The new reference is appropriate to the subject of the clause which deals with spiral dives.

Item 14 corrects an error in the heading to subclause 2.4 in unit G5 (Glider advanced manoeuvres) in Schedule 2 by omitting the word “aeroplane” and substituting “glider”.

Item 15 substitutes a new paragraph for paragraph 2.3.1 (d) in Section 5, unit LL-A Aeroplane low-level operations, in Schedule 2.

The new paragraph has references to “incipient spin” replaced with references to “wing drop at the stall”. This is another example of the new policy of avoiding potentially unsafe manoeuvres with intervention at an earlier stage in order to prevent loss of control.

For the same reason, in subparagraph 2.3.1 (d) (iv), reference to preventing “further yaw” is replaced by a reference to preventing “yaw”.

Item 16 removes the word “incipient” from paragraph (h) in Section 5, in unit LL-A Aeroplane- low-level operations, clause 4, in Schedule 2, so that the reference is simply to spinning rather than “incipient spinning”. The new wording provides clarity in place of the uncertainty of the meaning of “incipient spinning”.

Item 17 substitutes a new paragraph (a) for paragraph 4 (a) in Section 6, unit FAE-8 (Spinning), in Schedule 2.

The new paragraph 4 (a), for reasons previously stated, refers to “wing drop at the stall” rather than “incipient spin (wing drop at point of stall)” which inaccurately conflates the 2 terms. The new wording provides clarity in place of uncertainty of meaning.

Items 18, 19 and 20 concern Schedule 3 which lists theory knowledge requirements for pilot licences, ratings and endorsements.

Item 18 substitutes a new paragraph 3.6.6 for paragraph 3.6.6 stalling, spinning and spiral dives in Schedule 3, Appendix 1, unit 1.1.2 RBKA

The new paragraph is clearer as to what is required, referring to the standard recovery technique “from each” rather than “for each manoeuvre”. The term “manoeuvre” is inappropriate for what may be an unintended situation.

Item 19 substitutes a new paragraph (b) for subparagraph 2.4.1 (b), Appendix 1, Section 1.3 Unit 1.3.1, Clause 2 Aerodynamics, in Schedule 3. The new item corrects a typographic error in the formula.

Item 20 substitutes a new clause 2.8 for clause 2.8 Stalling, spinning and spiral dives in, Appendix 1, Unit 1.3.2 in Schedule 3. The new clause provides clarity in description of the onset of a stall in subclause 2.8.1. It also includes additional requirements in subclauses 2.8.4, 2.8.5 and 2.8.6, which now require a more detailed knowledge of the aerodynamic features of a stall and the sequence of events which may occur during departure from controlled flight following a wing drop at the stall.

Item 21 substitutes a new subparagraph 3.4 (a) (ii) for subparagraph 3.4 (a) (ii) in Section G, Appendix G.1 (RPL Aeroplane category rating flight test), in Schedule 5. The new subparagraph refers to “a wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s policy to avoid ambiguity and possible unsafe practice.

Item 22 substitutes a new subparagraph 3.4 (a) (ii) in Section H, Appendix H.1 (PPL Aeroplane category rating flight test, in Schedule 5. The new subparagraph refers to “a wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s preferred policy to avoid ambiguity and possible unsafe practice.

Item 23 substitutes a new sub-subparagraph 3.4 (a) (i) (B) in Section I, Appendix I.1 (CPL Aeroplane category rating flight test), in Schedule 5. The new sub-subparagraph refers to “wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s preferred policy to avoid ambiguity and possible unsafe practice.

Item 24 substitutes a new subparagraph 3.4 (a) (ii) in Section L, Appendix L.1 (Single-engine aeroplane class rating flight test) in Schedule 5. The new subparagraph refers to “wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s preferred policy to avoid ambiguity and possible unsafe practice.

Item 25 substitutes a new sub-subparagraph 3.4 (f) (v) (A) in Section Q, Appendix Q.1 (Low-level rating flight test) in Schedule 5. The new sub-subparagraph refers to “a wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s preferred policy to avoid ambiguity and possible unsafe practice.

Item 26 substitutes a new subparagraph 3.4 (b) (iii) in Section R, Appendix R.1 (Aerial application rating and aerial application endorsement flight test) in Schedule 5. The new subparagraph refers to “a wing drop at the stall” rather than “incipient spin”. This is in accordance with CASA’s preferred policy to avoid ambiguity and possible unsafe practice.

Legislation Act 2003 (the LA)

Paragraph 98 (5A) (a) of the Act states that CASA may issue instruments in relation to matters affecting the safe navigation and operation, or the maintenance, of aircraft.

Also, paragraph 98 (5AA) (a) states that an instrument issued under paragraph 98 (5A) (a) is a legislative instrument if the instrument is expressed to apply in relation to a class of persons. The instrument contains provisions which apply to classes of person, including, including Part 141 and 142 flight training operators, pilots seeking to engage in particular flight training or manoeuvres, and student pilots.

Paragraph 10 (1) (d) of the LA also provides that an instrument will be a legislative instrument if it includes a provision that amends another legislative instrument. The instrument amends the MOS which is a legislative instrument.

The instrument is, therefore, a legislative instrument, and is subject to tabling and disallowance in the Parliament under sections 38 and 42 of the LA.

Consultation

Consultation under section 17 of the LA has taken place with the aviation industry regarding both the content of the CASA Advisory circular *AC 61-16 v1.0* and the proposed amendments of the Part 61 Manual of Standards contained in this instrument.

Feedback was received from individuals and organisations, including Part 141 and 142 flight training operators, the Royal Aeronautical Society, Recreational Aviation Australia, the Gliding Federation of Australia and the Royal Federation of Aero Clubs of Australia. Inquiries were also made of the New Zealand Civil Aviation Authority.

The amendments are consistent with the recommendations in the consultations, which were predominantly in support of the proposed changes, although changes were made to accommodate some of the comments.

In those circumstances, CASA is satisfied that no further consultation is appropriate or reasonably practicable for this instrument for section 17 of the LA.

Office of Best Practice Regulation (OBPR)

The Office of Best Practice Regulation has assessed the amendments to be made by this instrument as having no more than a minor regulatory impact and determined that a Regulation Impact Statement was not required (OBPR id 43407).

Sector risk, economic and cost impact

Subsection 9A (1) of the Act states that, in exercising its powers and performing its functions, CASA must regard the safety of air navigation as the most important consideration. Subsection 9A (3) states that, subject to subsection 9A (1), in developing and promulgating aviation safety standards under paragraph 9 (1) (c), CASA must:

- (a) consider the economic and cost impact on individuals, businesses and the community of the standards; and
- (b) take into account the differing risks associated with different industry sectors.

The cost impact of a standard refers to the direct cost (in the sense of price or expense) which a standard would cause individuals, businesses and the community to incur. The

economic impact of a standard refers to the impact a standard would have on the production, distribution and use of wealth across the economy, at the level of the individual, relevant businesses in the aviation sector, and the community more broadly. The economic impact of a standard could also include the general financial impact of that standard on different industry sectors.

Although significant from the point of view of aviation safety the changes that the instrument makes can be regarded as minor or machinery in nature as they do not require significant change in the equipment or methods of carrying on business used by those affected. By clarifying the requirements for training and the acquiring of ratings and endorsements by pilots and flight instructors the amendments could in fact reduce the related costs. Because of previous consultation, most operators who will be affected are prepared for the changes. OBPR has also made an assessment that a **RIS** is not required for the amendments.

Statement of Compatibility with Human Rights

The Statement of Compatibility with Human Rights at Attachment 1 has been prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*. The instrument does not engage any of the applicable rights or freedoms, and is compatible with human rights, as it does not raise any human rights issues.

Making and commencement

The instrument has been made by the Director of Aviation Safety relying subsection 73 (2) of the Act.

The instrument commences on the day after it is registered.

Statement of Compatibility with Human Rights

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

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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*.

Overview of the legislative instrument

The instrument is intended to avoid the unnecessary taking of risks in the conduct of stall and spin training. It avoids risky manoeuvres that were engaged in, often without adequate instruction, and with unsuitable training aircraft. Such training may continue to be given, but only by suitably qualified instructors and in properly certified aircraft.

Changes are also made to the terminology used to describe the relevant procedures and the related knowledge standards in order to avoid ambiguity that could lead to unsafe practices.

The purpose is to reduce identified risks arising from current procedures and doubtful terminology.

Human rights implications

This legislative instrument does not engage any of the applicable rights or freedoms.

Conclusion

This legislative instrument is compatible with human rights as it does not raise any human rights issues.

Civil Aviation Safety Authority