



Australian Government

Civil Aviation Safety Authority

I, GRAEME MILLS CRAWFORD, Acting Director of Aviation Safety, on behalf of CASA, make this instrument under regulation 61.035 of the *Civil Aviation Safety Regulations 1998*.

[Signed G.M. Crawford]

Graeme M. Crawford
Acting Director of Aviation Safety

14 January 2021

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

1 Name of instrument

This instrument is the *Part 61 Manual of Standards Amendment Instrument 2021 (No.1)*.

2 Commencement

This instrument commences on the day after it is registered.

3 Amendment of Part 61 Manual of Standards

Schedule 1 amends Schedules 2, 3 and 5 to the *Part 61 Manual of Standards Instrument 2014*.

Schedule 1 Amendments

[1] Schedule 2, Section 4, unit A3, subclause 2.5 (A3.5 – Control aeroplane at slow speeds), paragraphs (b) to (g)

substitute

- (b) operate and monitor all aircraft systems when operating the aeroplane at slow speed in straight and level, climbing, descending and turning flight;
- (c) except for multi-engine aeroplane operations, select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve stable flight at the required flight tolerances that apply to the following:
 - (i) minimum approach speed with flaps retracted;
 - (ii) minimum approach speed in approach configuration;
 - (iii) flight at speeds just above stall warning activation or at the initial symptoms of stall;
- (d) except for multi-engine aeroplane operations, observe audible and visible stall warnings and recover aeroplane to controlled flight;
- (e) recognise and respond positively to reduced effectiveness of controls during slow flight manoeuvres;

- (f) recognise the need to increase power while manoeuvring in slow flight to maintain nominated altitude and a margin of speed above the stall;
- (g) transition from slow speed configuration, using take-off power to achieve nominated speed in excess of 1.5 Vs without loss of height.

[2] Schedule 2, Section 4, unit A5 (Aeroplane advanced manoeuvres)

substitute

2.1 A5.1 – Enter and recover from stall

- (a) perform stalling pre-manoevre checks;
- (b) recognise symptoms of a stall;
- (c) control the aeroplane by trimming and balancing accurately for slow flight and then applying the required pitch, roll and yaw inputs to enter and recover from the following:
 - (i) slow flight where initial symptoms of a stall become evident;
 - (ii) stall, recovering without application of power;
 - (iii) stall, recovering with full power applied (not required for multi-engine aeroplanes);
 - (iv) stall under the following conditions:
 - (A) straight and level flight;
 - (B) climbing flight (not required for multi-engine aeroplanes);
 - (C) descending flight (not required for multi-engine aeroplanes);
 - (D) approach to land configuration;
 - (E) turning flight (not required for multi-engine aeroplanes);
- (d) perform stall recovery including the following:
 - (i) reduce angle of attack;
 - (ii) prevent yaw;
 - (iii) use available power and height to increase the aircraft energy state;
 - (iv) avoid secondary stall;
 - (v) re-establish desired flight path and aircraft control with balanced control application;
- (e) perform stall recovery in simulated partial and complete engine failure conditions;
- (f) perform stall recovery at simulated low altitude.

2.2 A5.2 – Avoid spin

This element only applies to a single-engine aeroplane:

- (a) perform stalling pre-manoevre checks;
- (b) recognise wing drop at the stall;
- (c) from balanced flight, recover from stall in the attitudes and configurations most likely to cause a wing drop;
- (d) perform recovery where the aeroplane exhibits a tendency to drop a wing at the stall, in accordance with 5.1(d);
- (f) perform stall recovery at simulated low altitude.

- [3] **Schedule 2, Section 4, unit A5, clause 4 (Underpinning knowledge of the following:), subparagraph (b) (iii)**

after

weight,

insert

centre of gravity position,

- [4] **Schedule 2, Section 4, unit A5, clause 4 (Underpinning knowledge of the following:), paragraph (g)**

omit

- [5] **Schedule 2, Section 4, unit TR-SEA (Type rating – single-engine aeroplane), subparagraph 2.9 (d) (ii)**

omit

AOC

insert

AOA

- [6] **Schedule 2, Section 4, unit TR-SEA (Type rating – single-engine aeroplane), subparagraph 2.9 (d) (iii)**

omit

further

- [7] **Schedule 2, Section 4, unit TR-SEA (Type rating – single-engine aeroplane), subparagraph 2.9 (d) (v)**

substitute

(v) when the wings are unstalled, level them using balanced aileron control;

- [8] **Schedule 2, Section 4, unit FR-SEAC (Single-engine aeroplane class rating flight review), subparagraph 2.1 (d) (i)**

substitute

(i) initiate stall and recover where initial symptoms of a stall become evident;

- [9] **Schedule 2, Section 4, unit FR-MEAC (Multi-engine aeroplane class rating flight review), subparagraph 2.1 (d) (i)**

substitute

(i) initiate stall and recover where initial symptoms of a stall become evident;

- [10] **Schedule 2, Section 4, unit FR-MEAT (Multi-engine aeroplane type rating flight review), subparagraph 2.1 (d) (i)**

substitute

(i) initiate stall and recover where initial symptoms of a stall become evident;

- [11] **Schedule 2, Section 4, unit G5 (Glider advanced manoeuvres), subparagraph 2.1 (c) (i)**

substitute

- (i) where initial symptoms of a stall become evident;

- [12] **Schedule 2, Section 4, unit G5 (Glider advanced manoeuvres), subclause 2.2**

substitute

2.2 **G5.2 – Recover from spin at the incipient phase**

- (a) perform spin pre-manoevre checks;
- (b) recognise symptoms of spin at the incipient phase;
- (c) use the glider's attitude controls to enter a spin and recover at the incipient phase from the following flight conditions:
- (i) straight and level flight;
- (ii) climbing;
- (iii) turning;
- (d) use correct recovery technique to regain straight and level flight with height loss commensurate with the available altitude (simulated ground-base height may be set).

- [13] **Schedule 2, Section 4, unit G5, clause G5.3 (Recover from spiral dive), paragraph 2.3 (a)**

substitute

- (a) perform spiral dive pre-manoevre checks;

- [14] **Schedule 2, Section 4, unit G5 (Glider advanced manoeuvres) subclause 2.4, heading (Turn aeroplane steeply)**

omit

aeroplane

substitute

glider

- [15] **Schedule 2, Section 5, LOW LEVEL RATING, unit LL-A Aeroplane low level operations, paragraph 2.3.1 (d)**

substitute

- (d) recover from wing drop at the stall to straight and level in various configurations (limited to single-engine aeroplanes):
- (i) identify the approach to stall;
- (ii) recognise wing drop at the stall;
- (iii) reduce angle of attack to unstall the wing;
- (iv) prevent yaw;
- (v) use available power and height to increase the aircraft energy state;
- (vi) avoid secondary stall;

(vii) re-establish desired flight path and aircraft control with balanced control application;

(viii) reconfigure aeroplane as required;

[16] Schedule 2, Section 5, LOW LEVEL RATING, LL-A Aeroplane low level operations, clause 4 (Underpinning knowledge of the following:), paragraph (h)

omit

incipient

[17] Schedule 2, Section 6, unit FAE-8 (Spinning), paragraph 4 (a)

substitute

(a) actions required to recover from wing drop at the stall;

[18] Schedule 3, APPENDIX 1. FLIGHT CREW LICENCES AND AIRCRAFT CATEGORY RATINGS, Unit 1.1.2 RBKA: Basic aeronautical knowledge – aeroplane, Clause 3. Aerodynamics, paragraph 3.6.6 Stalling, spinning and spiral dives

substitute

3.6.6 Differentiate between a spin and a spiral dive in a light aeroplane and describe the standard recovery technique from each.

[19] Schedule 3, APPENDIX 1. FLIGHT CREW LICENCES AND AIRCRAFT CATEGORY RATINGS, SECTION 1.3 AERODYNAMICS (AD), Unit 1.3.1 CADC: CPL aerodynamics – all aircraft categories, Clause 2. Aerodynamics, Subparagraph 2.4.1 (b)

substitute

(b) $\frac{1}{2} \rho V^2$ – defines dynamic pressure (IAS);

[20] Schedule 3, APPENDIX 1. FLIGHT CREW LICENCES AND AIRCRAFT CATEGORY RATINGS, SECTION 1.3 AERODYNAMICS (AD), Unit 1.3.2 CADA: CPL aerodynamics – aeroplane, subclause 2.8.1 Stalling, spinning and spiral dives

substitute

2.8.1 Describe the following:

- (a) symptoms of approaching stall;
- (b) characteristics of a stall in the following circumstances:
 - (i) straight and level;
 - (ii) turning;
 - (iii) climbing and descending turns.

2.8.2 Explain the following:

- (a) the effect of using ailerons when approaching and during the stall;
- (b) why an aeroplane may stall at different speeds.

2.8.3 List the effect (increase/decrease/nil) of the following variables on the level flight stall IAS:

- (a) power;
- (b) flap;

- (c) wind shear vertical gusts;
 - (d) manoeuvres;
 - (e) weight;
 - (f) frost and ice;
 - (g) altitude.
- 2.8.4 Describe the aerodynamic principles of stall recovery.
- 2.8.5 Describe manoeuvres during which an aeroplane may stall at an angle which appears to be different to the true stalling angle.
- 2.8.6 Differentiate between a wing-drop at the stall, spin and spiral dive in a light aeroplane and describe the standard recovery technique from each.
- [21] Schedule 5, Section G, Appendix G.1 (RPL Aeroplane category rating flight test), subparagraph 3.4 (a) (ii)**
- substitute*
- (ii) a wing drop at the stall;
- [22] Schedule 5, Section H, Appendix H.1 (PPL Aeroplane category rating flight test), subparagraph 3.4 (a) (ii)**
- substitute*
- (ii) a wing drop at the stall;
- [23] Schedule 5, Section I, Appendix I.1 (CPL Aeroplane category rating flight test), sub-subparagraph 3.4 (a) (i) (B)**
- substitute*
- (B) a wing drop at the stall;
- [24] Schedule 5, Section L, Appendix L.1 (Single-engine aeroplane class rating flight test), subparagraph 3.4 (a) (ii)**
- substitute*
- (ii) a wing drop at the stall;
- [25] Schedule 5, Section Q, Appendix Q.1 (Low-level rating flight test), sub-subparagraph 3.4 (f) (v) (A)**
- substitute*
- (A) recover from a wing drop at the stall; and
- [26] Schedule 5, Section R, Appendix R.1 (Aerial application rating and aerial application endorsement flight test), subparagraph 3.4 (b) (iii)**
- substitute*
- (iii) for single-engine aeroplanes, recover from a wing drop at the stall;
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