	SAAA CONTROLLED DOCUMENT	
	Reference / Name	**TECH 2.1-001 Changes to SAAA Flight Test Guide & Cards**
	Revision No	1
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	Owner	TACM

Technical Bulletin

Changes to SAAA Flight Test Guide & Cards

Late November 2018, one of our members (who is an experienced experimental aircraft test pilot) suggested some changes to some of the advice shown within the SAAA Flight Test Guide book, and Test Cards. Specifically, with regard to **stalling** the aircraft and use of full power for recovery. Discussion with our Flight Operations National Council member agreed that the advice given to apply full throttle to recover from a standard stall should be changed.

A highly respected and qualified Aeronautical Engineer and past Factory Test Pilot, who is a highly respected aerobatic pilot and instructor was also asked for his expert input on the topic, and agreed - that to apply full power to recover from a standard stall was not required.

SAAA Flight Test Guide book and cards have therefore had the following changes made:

Page 26, para 6.2.3:

There are many stall recovery techniques available for different aircraft types. The test pilot should develop the optimum technique for the aircraft type. **Fundamentally, forward controls will unstall the wings.** *(Remainder of this para is unchanged…..)*

Page 27, para 6.2.3 (continued):

Stall Recovery (plan to recover by 3,000 feet AGL minimum altitude)

1. **Throttle to IDLE**
2. **Push forward elevator at steady rate to reduce angle of attack**
3. **Use rudder to keep directional control**

Following the stall:

4. **Increase power slowly**
5. **Wings level with ailerons**
6. **As speed increases, slowly recover to straight & level**

   (rapid elevator use may induce a secondary stall)

SAAA Flight Test Cards C-6 and D4 have changed and are included at page 3 and 4 of this document.

Action required:

Replace Cards C-6 and D-4, and attach these pages to your Flight Test Guide book.

Some references supplied by our Aeronautical Engineer/Test Pilot in support of the changes are:

1. Page 4-7 of the FAA Airplane Flying Handbook - Chapter 4.
https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/06_afh_ch4.pdf
Fundamentals of stall recovery section

2. Page 92 of the FAR 23 Flight Test Guide on **recovery** procedure:
https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_23-8C.pdf

The power used to regain level flight may not be applied until flying control is regained. This is considered to mean not before a speed of 1.2 V_{S1} is attained in the recovery dive.

3. Page 29 of CASA Flight Test Guide for ABAA Amateur-Built Aircraft
https://www.casa.gov.au/files/testingamateurpdf

During recovery from the stall power should not be changed until flying control is regained. This is interpreted to mean not before a speed of 1.2 V_S is attained.

4. Page 1-26 of CASA Generic Flight Test Report For Certification….
https://www.casa.gov.au/files/testinggenericpdf

During recovery from the stall power should not be changed until flying control is regained. This is interpreted to mean not before a speed of 1.2 V_S is attained.

FIRST FLIGHT

Stall Recovery (plan to recover by 3,000 feet AGL minimum altitude)

Simultaneously:

1. **Throttle to IDLE**
2. **Push forward elevator at steady rate to reduce angle of attack**
3. **Use rudder to keep directional control**

Following the stall:

4. **Increase power slowly**
5. **Wings level with ailerons**
6. **As speed increases, slowly recover to straight & level**

   (rapid elevator use may induce a secondary stall)

ALTITUDE	AIRSPEED	POWER	FUEL
Minimum 3000 ft AGL		IDLE	

INCIPIENT STALL 1: CRUISE CONFIGURATION

- ❑ Pre-stall warning recognisable
- ❑ What was the pre-stall warning?
- ❑ IAS for pre-stall warning

SLOW SPEED HANDLING

RECOVERY

There are many stall recovery techniques available for different aircraft types. The test pilot should develop the optimum technique for the aircraft type. Fundamentally, forward controls will unstall the wings. Rudder should be used to minimise sideslip and yaw, which could cause inadvertent spin entry. Although some aircraft are fully controllable with ailerons throughout a stall, it would be advisable not to use them until more confident with the stall characteristics. Inappropriate use of aileron may cause an uncommanded wing drop in the opposite direction. As the aircraft accelerates clear of the stall, judiciously introduce back stick to recover from the dive, and be careful not to re-enter the stall. A generic stall recovery is as follows:

Stall Recovery (plan to recover by 3,000 feet AGL minimum altitude)

Simultaneously:

1. **Throttle to IDLE**
2. **Push forward elevator at steady rate to reduce angle of attack**
3. **Use rudder to keep directional control**

Following the stall:

4. **Increase power slowly**
5. **Wings level with ailerons**
6. **As speed increases, slowly recover to straight & level**

   (rapid elevator use may induce a secondary stall)