Part 23 Rewrite
– FAA/CS Part 23 Reorganisation Initiative
– an Australian perspective

Canberra 22 May 2015
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Part 23 rewrite – what is it?

- New structure for specifying design standards for the certification of Part 23 aircraft.
  - High level performance based rules.
  - Various guidance materials.
- Incorporates CS-VLA to Commuter category
- FAA/EASA harmonisation
History


- **Goals**
  - Improving safety
  - Reducing certification costs
  - Removing impediments to new technologies.
1. CPS Recommendations

- Reorganise Part 23 using *Performance* and *Complexity* criteria
- Simple rules for simple aircraft
- Design and Production Handbook
- Alternative conformity processes
- Bigger role for Applicant to find compliance
- More flexibility in Orders and ACs
- Video witnessing of tests
A Report from the

14 CFR Part 23 Reorganization Aviation Rulemaking Committee to the Federal Aviation Administration

Recommendations for increasing the safety of small general aviation airplanes certificated to 14 CFR part 23

June 5, 2013

Prepared for
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Goals

- Twice the safety at half the cost
- Regulations that will stand the test of time
- Remove time and expense to regulator and industry associated with overly prescriptive and outdated regulations
2. Part 23 Reorg Committee Recommendations

- Restructure Part 23 to rewrite regulations in a broad, general, progressive manner.
  - Based on airplane performance and complexity
  - Proportional rules

- Compliment broad performance based regulations with *consensus standards*, which would provide more detailed means of compliance.
2. Part 23 Reorg Committee Recommendations – cond.

- International consensus – global approach.
- Addressed safety enhancement of existing fleet of GA aeroplanes.
- Additionally recommended changes to production, changed products, and continuing airworthiness requirements.
Appendix F

Figure 1 – Requirements and Procedures Hierarchy

Level 1
What you have to do and why. Any Company or Regulatory requirements will be identified at this level.

Level 2
How you meet regulatory or company requirements

Level 3
Detail instructions

Level 4
Specific for

- Forms
- Templates
- Records

- Quality Assurance
- Policy
- Design Handbook
- Production Handbook
- Process Descriptions
- Work Instructions

Purpose. The purpose of this section is to provide an airplane that can be recovered from an inadvertent or intentional spin. However, since most spin accidents take place following spin entry while in an airport traffic pattern and too close to the ground to recover, the purpose of this section is also to provide airplanes that do not have a tendency to enter a spin during maneuvering that is typical while preparing to land. This capability can be achieved through aerodynamic means or by using specific systems that will help the pilot to avoid unintentional spins.

Requirement.

(a) A single engine airplane must not have a tendency to inadvertently enter a spin.
(b) If a single engine airplane cannot comply with (a), or if intentional spins are approved, it must be demonstrated that safe recovery can be made using defined recovery procedures.
Part 23 rewrite – what is it?

Two (plus two) Parts

Part 1 – new Part 23 rules
Part 2 – consensus airworthiness standards.

Part 1A – interpretative material to new rules
Part 2A – technical advisory material
Why?

- Bracket creep
- Rule making has not been able to keep up with new technologies.
- Limited regulator resources
- Outcome from special conditions is less predictable.
What industry wants.

- Not to have development stifled by regulation
- Ready access to new technology - avionics
- Cheaper certification.
- Greater say in design standards.
- Flexibility (non-prescriptive)
- Clear definition of what is required for certification – concise advisory material (prescriptive).
What the regulators want

- Focus on safety performance
- Flexibility
- Safety standards that reflect the exposure to risk.
- Rules that allow for future technologies.
- Rules that don’t need constant amendment to keep them relevant.
What we get.

- Part 1 – Part 23 rules.
  - 24 pages instead of 150
- New numbering and organisation.
- Consistent language
- Removal of normal/utility/aero/commuter categories.
- 4 airworthiness levels / 2 speed categories

4 Airworthiness Levels

CS 23.5 Normal Category aeroplane

Certification Specifications specify the following aeroplane airworthiness levels:

(1) Level 1 — seating configuration of 2 or less;
(2) Level 2 — seating configuration of 2 to 6, not including the pilot(s);
(3) Level 3 — seating configuration of 7 to 9, not including the pilot(s);
(4) Level 4 — seating configuration of 10 to 19, not including the pilot(s).
Speed Categories

**CS 23.5 Normal Category aeroplane**

Certification Specifications are divided into the following performance levels:

1. Low-speed — VC or VMO ≤ 250 KCAS (or MMO ≤ 0.6);
2. High-speed — VC or VMO > 250 KCAS (or MMO > 0.6)
CS 23.215 Stall characteristics, stall warning, and spins (see GM 23.215)

(a) The aeroplane has satisfactory stall characteristics in straight, turning, and accelerated turning flight stalls with a clear and distinctive stall warning that provides sufficient margin for the pilot to avoid departure from controlled flight.

(b) Aeroplanes not intended for aerobatic manoeuvres are designed to have:
   (1) a benign behaviour when departing controlled flight, or
   (2) have a system preventing departure from controlled flight.

(c) Aeroplanes intended for aerobatics have the ability to recover from any manoeuvre, without exceeding limitations or exhibiting unsafe characteristics.
Part 23 Rules – Part 1A

Interpretative Material. Sample only

GM 23.215 Stall characteristics, stall warning, and spins
(a) The aeroplane, …, will give the pilot sufficient time and margin to react to, and prevent inadvertent departure from controlled flight.

(b) Aeroplanes are designed so that in case of inadvertent departure from controlled flight, the aeroplane:

   (1) can be quickly recovered to a controlled horizontal flight;
   (2) does not lose too much height; and
   (3) does not require exceptional piloting skills to recover.

Etc.
ASTM Process

- New committee F44.
  - Various sub-committees
- Several stages to rewrite
  1. Incorporating existing requirements without change. 4 Airworthiness levels.
  2. Rationalisation, identified improvements
- Not by majority vote - consensus
What is CASA doing?

- CASA is participating in several of the ASTM subcommittees.
- Not yet planned regulatory change to accommodate – need to see outcome to determine whether any changes are required.
Issues

- Loss of control of ACs by regulators.
- Death by committee. Too much too quickly?
- Quality of engaged review.
- New *airworthiness levels* don’t integrate cleanly with existing standards, which in many cases were based on imperial data studies. ASTM left to adapt.
- ASTM standards are marching ahead, before the safety objective rules have been finalised.
Will it deliver?

- A lot of momentum
- Ambitious timetable
- ASTM track record
Questions?

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