



# EASA

European Aviation Safety Agency

# Standard Changes & Repairs (CS-STAN)

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Issue 1

**STC WORKSHOP**  
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➤ Request of the stakeholders to allow the use of FAA AC 43-13 for common simple changes and standard repairs.

➤ M.A.304 Data for modifications and repairs

Damage shall be assessed and modifications and repairs carried out using as appropriate:

(a) data approved by the Agency; or

(b) data approved by a Part-21 design organisation; or

(c) data contained in the certification specifications referred to in point 21A.90B or 21A.431B [→ **Standard Changes & Repairs**]



- Minor Changes
- Major Changes / STC
- Standard Changes
  - (i) aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;
  - (ii) rotorcraft of 3 175 kg MTOM or less;
  - (iii) sailplanes, powered sailplanes, balloons and airships, as defined in ELA1 or ELA2,
- that follow CS-STAN
- that are not in conflict with TC holders data



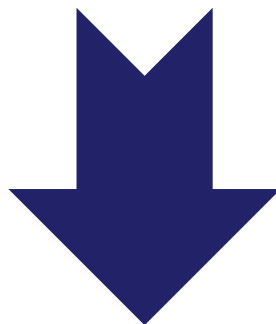
# Legal Background II

Aircraft Category	Approved Data	Release of parts
CS 22	<ul style="list-style-type: none"><li>• [Generic Change]</li><li>• Approved Change</li><li>• Standard Change</li></ul>	<ul style="list-style-type: none"><li>• Form 1</li><li>• Standard Part (AMC 21.303 (c) 2)</li><li>• Owner accepted part (21.307 (b))</li></ul>
ELA1	<ul style="list-style-type: none"><li>• Approved Change</li><li>• Standard Change</li></ul>	<ul style="list-style-type: none"><li>• Form 1</li><li>• Owner accepted part (21.307 (b))</li></ul>
ELA2 – 5.7t (3.1t)	<ul style="list-style-type: none"><li>• Approved Change</li><li>• Standard Change</li></ul>	<ul style="list-style-type: none"><li>• Form 1</li></ul>

Note: Standard Changes and Standard Repairs are not meant to be used in serial production.



<b>CS-STAN Initial Issue</b> (July 2015)	<b># of Standard Changes</b>	<b># of Standard Repairs</b>
	22	2



<b>Draft CS-STAN Issue 2</b> (April 2017)	<b># of Standard Changes</b>				<b># of Standard Repairs</b>			
	Un- changed	amended	new	total	Un- changed	amended	new	total
	6	16	12	34	1	1	2	4



# Example – Radio installation / exchange

Standard Change CS-SC001a

## INSTALLATION OF VHF VOICE COMMUNICATION EQUIPMENT

### **1. Purpose**

Exchange of communications (COM) equipment, and for aircraft limited to VFR operation, also installation of COM equipment. This SC does not include installation of antennas.

### **2. Applicability/Eligibility**

Aeroplanes not being complex motor-powered aircraft with a maximum cruising speed in ISA conditions below 250 kts, rotorcraft not being complex motor-powered aircraft and any ELA2 aircraft.

### **3. Acceptable methods, techniques and practices**

The following standards contain acceptable data:

- FAA Advisory Circular AC 43-13-2B Chapter 2.



# Example – cont.

Additionally, the following applies:

- The equipment is authorised in accordance with JTSO-2C37d, JTSO-2C37e, ETSO-2C37e, JTSO-2C38d, JTSO-2C38e, ETSO-2C38e or ETSO-2C169a, or later amendments, or equivalent.
- The equipment is capable of 8.33 kHz and 25 kHz channel spacing.
- The minimum output power specified for the radio is sufficient for the operation depending on the maximum flight level of the aircraft. The table below is valid for standard antenna installations (antenna type and position) with standard cable length less than 4 m and 2 connectors:

Maximum aircraft Flight Level (FL)	Minimum output power
up to 100	4 Watts
100 to 150	6 Watts
150 to 200	8 Watts
200 to 250	10 Watts
250 to 300	12 Watts
300 to 400	16 Watts



# Example - cont.

For different installations (cable length, connectors), the required output power needs to be assessed by additional analysis:

- The equipment is qualified for the environmental conditions to be expected during normal operation.
- Instructions and tests defined by the equipment manufacturer have to be followed.

## **4. Limitations**

Any limitations defined by the equipment manufacturer apply.

The equipment installation cannot be used to extend the operational capability of the specific aircraft (e.g. from VFR to IFR operation).

In the case of rotorcraft approved for NVIS, if cockpit panels are to be inserted, the change cannot be considered an SC.

## **5. Manuals**

Amend the AFM with AFMS containing or referencing the equipment instructions for operation, as required.

Amend the Instructions for Continuing Airworthiness to establish maintenance actions/inspections and intervals, as required.

## **6. Release to service**

This SC is not suitable for release to service by the Pilot-owner.





# Existing Standard Changes

- CS-SC001a — Installation of VHF voice communication equipment
- CS-SC002b — Installation of a Mode S elementary surveillance equipment
- CS-SC003b — Installation of Audio Selector Panels and Amplifiers
- CS-SC004a — Installation of antennas

CS-STAN can not be used

- to install or exchange integrated avionic or navigation systems
- to change the kind of operation

- CS-SC054b — Exchange of Distance Measurement Equipment (DME)
- CS-SC055b — Exchange of ADF equipment
- CS-SC056b — Exchange of VOR equipment
- SC-CS058a — Installation of traffic awareness beacon system (TABS) equipment

and Landing &

lights  
(4) batteries



# Existing Standard Changes

- CS-SC081a — Exchange of tyres (inner tubes/outer tyres)
- CS-SC082a — Exchange of skids on wing tips/fuselage tails
- CS-SC083a — Exchange of flexible seals on control surfaces
- CS-SC101b — Installation of emergency locator transmitter (ELT) equipment
- CS-SC102a — Installation of DC power supply systems (PSS) for portable electronic devices (PED)
- CS-SC103a — Exchange of interior material covering floor, sidewall and ceiling
- CS-SC104a — Installation of lightweight in-flight recording systems
- CS-SC151a — Installation of headrest
- CS-SC152a — Changes to seat cushions including the use of alternative foam materials
- CS-SC153b — Exchange of safety belts — torso restraint systems
- CS-SC201a — Exchange of power plant instruments
- CS-SC202b — Use of Avgas UL 91
- CS-SC203b — Use of Avgas Hjelmco 91/96 UL and 91/98 UL

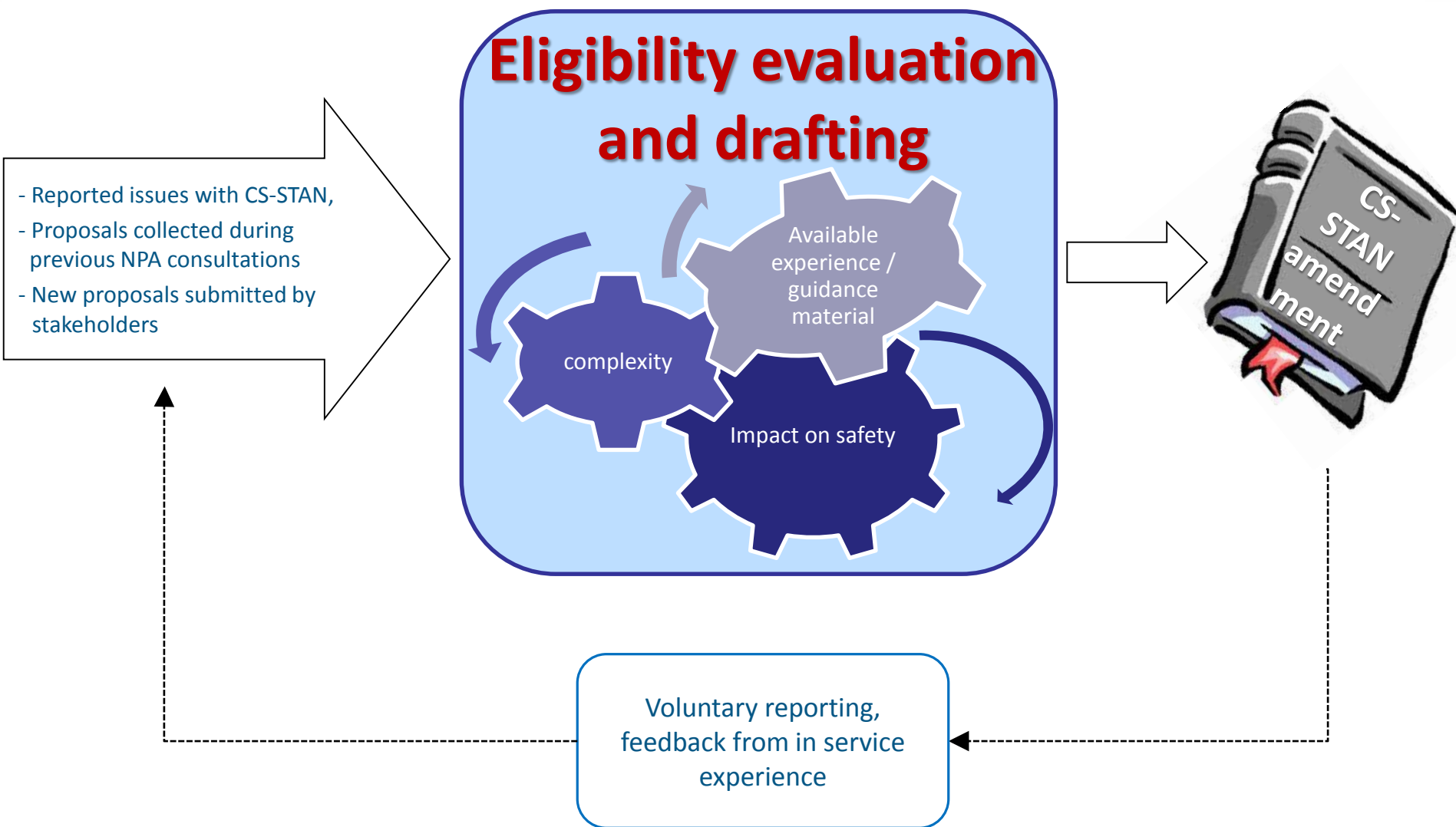


# Existing Standard Changes

- CS-SC204a — Installation of external powered engine preheater
- CS-SC205a — Installation of fuel low level sensor (FLLS)
- CS-SC251b — Installation of an angle of attack (AoA) indicator system
- CS-SC401b — Exchange of basic flight instruments
- CS-SC402b — Installation of sailplane equipment
- CS-SC403a — Provisions for the installation of lightweight cameras
  
- **Repairs**
- CS-SR801a — Aircraft Repair according to FAA Advisory Circular AC 43.13-1B
- CS-SR802b — Repair of sailplanes including powered sailplanes, LSA and VLA
- CS-SR803a — Temporary repair of canopy cracks by drilling a stopping hole
- CS-SR804a — Use of alternative adhesive for repairs of wood and wooden mixed structures



# Feedback loop





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Questions..?



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