

European Aviation Safety Agency

Certification Specifications

for

Standard Changes

and

Standard Repairs

CS-STAN

ACCEPTABLE METHODS, TECHNIQUES AND PRACTICES FOR CARRYING OUT AND IDENTIFYING
STANDARD CHANGES AND STANDARD REPAIRS (SCs/SRs) AS PERMITTED IN PART-21.

Issue 1

8 July 2015¹

¹ For the date of entry into force of this Issue, please refer to Decision 2015/016/R in the [Official Publication](#) of the Agency.

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CS STAN.00 Scope

These Certification Specifications for SCs/SRs contain design data with acceptable methods, techniques and practices for carrying out and identifying SCs/SRs. SCs/SRs, designed in compliance with these Certification Specifications, are not subject to an approval process, and, therefore, can be embodied in an aircraft when the conditions set out in the relevant paragraphs of Part-21² for SCs/SRs, i.e. 21.A.90B or 21.A.431B, are met.

CS STAN.10 Applicability

In addition to the conditions of 21.A.90B and 21.A.431B, for each SC/SR, these Certification Specifications may further restrict its applicability to certain aircraft, or to some areas of an aircraft, or to certain aircraft operations.

CS STAN.20 Operational limitations or restrictions

SCs/SRs, as described in these Certification Specifications, may contain operational limitations or restrictions with regard to the use of an aircraft instrument/equipment.

Equipment installed as part of a SC cannot be used to eliminate or reduce the existing airworthiness limitations and operational limitations of the aircraft. As a consequence, a SC might introduce limitations on the use of the installed equipment (e.g. a navigation equipment may be installed following a SC, but this installation may not permit that the equipment is used as a primary navigation means if the functionality did not exist before the change was embodied).

Any restriction or limitation applicable due to the embodiment of the SC/SR is included in the aircraft manuals or records, as necessary, and in EASA Form 123.

CS STAN.30 Changes/Repairs that are not in conflict with TC holders' data.

Each SCs/SRs has an applicability independent of the aircraft type and can be embodied in/on an aircraft type unless specific instructions for such a change or repair are issued by the TC holder. In case that specific data issued by the TC holder exist, the TC holder data takes precedence over a SC/SR. If the change or repair would conflict with the TC holder data, CS-STAN should not be followed and the change/repair should be approved following Part-21 Subparts D or M.

CS STAN.40 Referenced documents

The acceptable methods, techniques and practices contained in these Certification Specifications may refer to other documents. Design and production considerations or operational restrictions/limitations established in these documents are applicable unless otherwise stated and, therefore, may further restrict the applicability of the SC/SR. The same applies to other documents

² Annex of Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations *and repealing Commission Regulation (EC) No 1702/2003* (OJ L 243, 27.9.2003, p.6).

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referred to in these aforementioned referenced documents. Any restriction or limitation established in the referenced document, directly or 'in cascade', affecting the operation or airworthiness of the aircraft, is included in the aircraft manuals or records, as necessary, and in Form 123.

Other references mentioned in these documents and quoted 'as example', 'for information', etc. are to be considered, but the installer must ensure that the example or information is applicable to the design being undertaken and not in contradiction with TC holders data before using it.

The latest available versions of the third-party references should be considered unless otherwise stated by the Agency.

References to other (e.g. foreign) legislation in the referenced documents are not applicable and are replaced by the relevant European rules (e.g. approval process described in FAA Advisory Circular AC 43.13 to obtain an FAA field approval should be ignored and, instead, the installer should follow the European rules).

CS STAN.50 Instructions for Continuing Airworthiness

Due to the SC/SR being embodied, the aircraft instructions for continuing airworthiness may need to be updated. This update is considered to be part of this SC/SR, and, therefore, requires no specific approval.

CS STAN.60 Aircraft Flight Manual Supplement (AFMS)

Due to the SC/SR being embodied, the AFM may need to be updated. This manual supplement is considered to be part of this SC/SR, and, therefore, requires no specific approval.

CS STAN.70 Acceptable Means of Compliance (AMC)

AMC for the release to service of the aircraft after embodiment of the SC/SR, the eligibility of the persons entitled to this release, the parts and appliances suitable for use in a SC/SR and their identification, the documents to be produced and kept with the change/repair, the required amendment to aircraft manuals, the EASA Form 123 (change/repair embodiment record), etc. are contained in AMC M.A.801 in Annex I to Decision No 2003/19/RM.

CS STAN.80 Definitions

'ADF' means Airborne Automatic Direction Finding.

'AEH' means Airborne Electronic Hardware

'AFCS' means Automatic Flight Control System

'AFM(S)' means Aircraft Flight Manual (Supplement).

'ELA1 and ELA2 aircraft' means a manned European light aircraft, as defined in Regulation (EU) No 748/2014. An aircraft may comply with both ELA1 and ELA2 definitions, and, therefore, be classified as per both ELA1 and ELA2 categories of aircraft.

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'ETSO equivalent' an article is equivalent to an authorised ETSO article if it is grandfathered in accordance with Article 6 of Regulation (EU) No 748/2012, or if it has been accepted in accordance with provisions of international bilateral safety agreements.

'Exchange' means the substitution of an existing equipment or instrument (or parts of a system) with a different one with a different part number which provides the same functionality/information.

'FMS' means Flight Management System

'IFR' means Instrument Flight Rules.

'IMC' means Instrumental Meteorological Conditions.

'Installation' means the embodiment in/on the aircraft of equipment, instrument or system to provide a new function or new information not previously available at the aircraft. Whenever a SC covers an 'Installation' of an equipment/instrument/system, the exchange of the equipment/instrument/system is also covered by the same SC.

'MFD' means multifunctional displays

'MTOM' means Maximum Take-Off Mass.

'NTO' means Non-Technical Objection.

'NVIS' means Night Vision Imaging System

'Pilot-owner' means a person qualified in accordance with M.A.803 (a) of Annex I (Part-M) of Regulation (EU) No 1321/2014.

'POH' means Pilot Operating Handbook

'(S)TC' means (Supplemental) Type Certificate.

'TCDS' means Type Certification Data Sheet

'VFR' means Visual Flight Rules.

'VOR' means VHF Omnidirectional Radio.

SUBPART B — STANDARD CHANGES

LIST OF STANDARD CHANGES

Group Systems—Communication:

- CS-SC001a — Installation of VHF voice communication equipment
- CS-SC002a — Installation of a Mode S elementary surveillance equipment
- CS-SC003a — Installation of Audio Selector Panels and Amplifiers
- CS-SC004a — Installation of antennas

Group Systems — Electrical:

- CS-SC031a — Exchange of conventional Anti-Collision Lights, Position Lights and Landing & Taxi lights by LED type lights

Group Systems — Avionics/NAV/Instruments:

- CS-SC051a — Installation of 'FLARM' equipment
- CS-SC052a — Installation of moving-map systems to enhance situational awareness
- CS-SC053a — Installation of Radio Marker Receiving equipment
- CS-SC054a — Exchange of Distance Measurement Equipment (DME)
- CS-SC055a — Exchange of ADF equipment
- CS-SC056a — Exchange of VOR equipment

Group Cabin:

- CS-SC101a — Installation of Emergency Locator Transmitter (ELT) equipment

Group Survivability Equipment:

- CS-SC151a — Installation of headrest
- CS-SC152a — Changes to seat cushions including the use of alternative foam materials
- CS-SC153a — Exchange of safety belts — torso restraint systems

Group Powerplant:

- CS-SC201a — Exchange of power plant instruments
- CS-SC202a — Use of Avgas UL 91
- CS-SC203a — Use of Avgas Hjelmc0 91/96 UL and 91/98 UL
- CS-SC204a — Installation of external powered engine preheater

Group Flight:

- CS-SC251a — Installation of an Angle of Attack (AoA) indicator system

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Group Miscellaneous:

CS-SC401a — Exchange of basic flight instruments

CS-SC402a — Installation of sailplane equipment

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.

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

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.

Standard Change CS-SC002a

INSTALLATION OF MODE S ELEMENTARY SURVEILLANCE EQUIPMENT

1. Purpose

Installation or exchange of Mode S transponder including, optionally, an altitude encoder exchange. This SC does not include installation of antennas.

This SC does not cover 1090 MHz Extended Squitter (ES) ADS-B Out installations compliant to Section 4 of CS-ACNS or AMC 20-24.

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.

Additionally, the following applies:

- The transponder equipment and its installation are in compliance with paragraph CS ACNS.D.ELS.010 of CS-ACNS and the altitude encoder meets ETSO C-88A or equivalent.
- The elementary surveillance system provides data according to CS ACNS.D.ELS.015.
- This SC does not cover 1090 MHz Extended Squitter (ES) ADS-B Out installations compliant to Section 4 of CS-ACNS or AMC 20-24. However, the voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report lowest quality, the equipment manufacturer has stated compatibility with the directly connected GPS source, and the transponder is not authorised according to ETSO C166b or equivalent.
- If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne'.
- The reported pressure altitude is obtained from an approved source connected to the static pressure system providing pressure to the instrument used to control the aircraft.
- Any antenna connected to the transponder has a resulting pattern which is vertically polarised, omnidirectional in the horizontal plane and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres.
- The equipment is qualified for the environmental conditions to be expected during normal operation.

- Instructions from equipment manufacturer have to be followed.
- A system ground test verifying all transmitted data according to ACNS.D.ELS.015 has to be performed.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

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 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. In particular, include a check every two years to ensure that the data provided according to CS-ACNS ACNS.A.GEN.010 is correct.

6. Release to service

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

Standard Change CS-SC003a

INSTALLATION OF AUDIO SELECTOR PANELS AND AMPLIFIERS

1. Purpose

Installation or exchange of audio selector panels and amplifiers

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, 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.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSO or equivalent;
- the equipment has at least the audio functionality of previous installed equipment, and is compatible with the existing installation;
- the equipment is compatible with connections to existing communication and navigation systems;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- instructions and tests defined by the equipment manufacturer are followed.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

Any limitations of the existing installation remain valid.

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 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.

Standard Change CS-SC004a

INSTALLATION OF ANTENNAS

1. Purpose

This SC covers the installation and exchange of antennas other than RADAR and directional SAT/COM antennas. For aircraft certified to operate in known icing conditions, this SC only covers the exchange of antennas.

Installation of large antennas (such as High Frequency (HF) or Direction Finding (DF) antennas) in rotorcraft is not covered by this SC.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, 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 1 & 3; and
- FAA Advisory Circular AC 43.13-1B, Chapter 11, Section 15 (on electrical bonding).

Additionally, the following applies:

- The antenna is installed in non-pressurised secondary structure areas, unless the location is set for this purpose in the airframe documentation or provided by the TC holder (i.e. NTO), or the antenna is being exchanged and has the same footprint.
- The antenna is located in a distance to other antennas appropriate for the aircraft and the antennas.
- The antenna is compatible with the connected equipment and is suitable for the environmental conditions to be expected during normal operation.
- For aircraft certified to operate in known icing conditions, the new antenna is located at the same position and has a size similar to that of the existing antenna being replaced.
- Instructions and tests defined by the equipment manufacturer have to be followed.
- The performance of the new antenna installation or of the new antenna type has to be confirmed during testing after installation (e.g. range of radio).

4. Limitations

Any limitations defined by the equipment manufacturer apply.

5. Manuals

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.

Standard Change CS-SC031a

EXCHANGE OF CONVENTIONAL ANTI-COLLISION LIGHTS, POSITION LIGHTS AND LANDING & TAXI LIGHTS BY LED TYPE LIGHTS

1. Purpose

Exchange of anti-collision lights, position lights and landing & taxi lights by LED type lights.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft and not approved for NVIS and any ELA2 aircraft.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43.13-2B, Chapter 4; and
- FAA Advisory Circular AC 43.13-1B, Chapter 11, Section 15 (on bonding).

Additionally the following applies:

- if applicable, the equipment is authorised according to the applicable ETSO/JTSO or equivalent;
- the equipment is installed at the same location with identical light distribution angles and colours;
- 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; and
- any modification of electrical wiring is performed in accordance with acceptable practices such as the aircraft maintenance manual or Chapter 11 of FAA Advisory Circulars AC 43.13-1B and Chapter 4 of AC 43.13-2B.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

5. Manuals

If needed, amend the AFM with AFMS containing equipment instructions for operation, as required.

Amend the Instructions for Continuing Airworthiness to establish maintenance actions/inspections and intervals, as required. In particular, consider description of required maintenance actions after failure of single LED segments.

6. Release to service

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

Standard Change CS-SC051a

INSTALLATION OF 'FLARM' EQUIPMENT

Note: Originally FLARM® was developed for sailplanes but nowadays such devices are more and more installed in light aeroplanes as well. While FLARM® devices are considered Standard Parts in case of sailplanes, 21.A.307(c) may allow their installation without Form 1.

1. Purpose

Installation of FLARM® compatible Anti-Collision Awareness Systems. The system is based on the specifications as defined by FLARM Technology GmbH.

Note: FLARM is not compatible with Transponder Mode A/C/S, ADS-B or TCAS/ACAS.

The installation of external antennas or additional batteries is not covered by this SC.

2. Applicability/Eligibility

ELA2 aircraft.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43-13-2B, Chapters 1 and 2.
- FOCA policy 42-00.02: 'FLARM® and TR-DVS® Installation Policy for Aircraft, TMG, Helicopters, (Gliders)'

Note: This Policy is applicable in principle for all installations, excluding the requirement that the device needs to be approved by FOCA.

Additionally, the following applies:

- The design of the equipment installation must take into account crashworthiness, arrangement and visibility, interferences with other equipment, the canopy jettison and the emergency exit.
- The design of the equipment installation must take into account the structural integrity of the instrument panel or any other attachment point. Special consideration is necessary for equipment installed at a location behind the occupant(s).
- A data bus/data connectivity between the FLARM device and other equipment which is:
 - ETSO authorised (or equivalent); or
 - required by TCDS, AFM or POH;
 - required by other applicable requirements such as those for operations and airspace; or
 - mandated by the respective Minimum Equipment List (MEL), if this exist,

is not allowed unless the FLARM device is explicitly listed by its manufacturer as compatible equipment to be connected to.

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

4. Limitations

- The FLARM[®] based system cannot be used to substitute any Anti-Collision Device mandated by EASA OPS rules for the operation intended. The system is not to be used in conjunction with night vision systems or in night or IMC conditions.
- Any limitations defined by the manufacturer of the FLARM[®] device.

5. Manuals

The AFMS shall, at least, contain:

- the system description, operating modes and functionality;
- limitations, warnings and placards, at least, for the following:
 - ‘For situational awareness only’
 - ‘Use in VFR day only’;
- the normal and emergency operating procedures; and
- instructions for software and database updates.

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.

Standard Change CS-SC052a

INSTALLATION OF MOVING-MAP SYSTEMS TO ENHANCE SITUATIONAL AWARENESS

1. Purpose

Installation or exchange of a 'moving-map' system to enhance situational awareness. This SC does not include installation of external antennas.

2. Applicability/Eligibility

ELA2 aircraft.

3. Acceptable methods, techniques and practices

The following standard contains acceptable data:

- FAA Advisory Circular AC 43-13-2B, Chapter 1 and 2.

Additionally, the following applies:

- the design of the equipment installation must take into account crashworthiness, arrangement and visibility, interferences with other equipment, the canopy jettison (if applicable) and the emergency exit;
- a data bus/data connectivity between the installed equipment and other equipment which is:
 - ETSO authorised (or equivalent), or
 - required by TCDS, AFM or POH,
 - required by other applicable requirements such as those for operations and airspace, or
 - mandated by the respective MEL, if this exist,is not allowed unless the equipment being installed is explicitly listed by its manufacturer as compatible equipment to be connected to;
- the equipment is suitable for the environmental conditions to be expected during normal operation;
- the equipment is not used as primary means of navigation; and
- instructions and tests defined by the equipment manufacturer have to be followed.

4. Limitations

- The system is not to be used in conjunction with night vision systems or in night or IMC conditions.
- The provided information is used only in an advisory or supplementary manner (no hazard, no credit basis).
- Any limitations defined by the equipment manufacturer apply.

5. Manuals

The AFMS shall, at least, contain:

- the system description, operating modes and functionality;
- limitations, warnings and placards, at least, for the following:
 - ‘For situational awareness only’, and
 - ‘Use in VFR day only’;
- the normal and emergency operating procedures; and
- instructions for software and database updates.

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.

Standard Change CS-SC053a

INSTALLATION OF RADIO MARKER RECEIVING EQUIPMENT

1. Purpose

Installation or exchange of Radio Marker Receiving equipment.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, 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.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSA or equivalent;
- the equipment is compatible with the existing installation;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- 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.

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 AFM with AFMS containing or referencing the relevant 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.

Standard Change CS-SC054a

EXCHANGE OF DISTANCE-MEASURING EQUIPMENT (DME)

1. Purpose

Exchange of DME operating within the radio frequency range of 960–1215 MHz. This SC does not include installation of antennas.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, 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.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSA or equivalent;
- the equipment has the same functionality, is installed at the same location, and is compatible with the existing installation;
- the equipment is compatible with connections to existing flight management/navigation systems;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- 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.

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 AFM with AFMS containing or referencing the relevant 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.

Standard Change CS-SC055a

EXCHANGE OF ADF EQUIPMENT

1. Purpose

Exchange of ADF equipment. This SC does not include installation of antennas.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft with the ADF equipment not connected to AFCS with upper modes and integrated FMS navigation system, 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.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSA or equivalent;
- the equipment has the same functionality, is installed at the same location, and is compatible with the existing installation (i.e. approval grandfathered under Regulation (EU) No 748/2012), as well as with connections to existing flight management/navigation systems;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- 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.

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

In the case of rotorcraft, no SW or AEH should be loaded nor analogic instruments be exchanged with digital instruments or MFD.

5. Manuals

Amend 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.

Standard Change CS-SC056a

EXCHANGE OF VOR EQUIPMENT

1. Purpose

Exchange of VOR equipment including Localizer/Glideslope indicator and converter. This SC does not include installation of antennas.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft with the VOR equipment not connected to AFCS with upper modes and integrated FMS navigation system, 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.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSO or equivalent;
- the equipment has the same functionality, is installed at the same location, and is compatible with the existing installation;
- the equipment is compatible with connections to existing flight management/navigation systems;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- 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.

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

In the case of rotorcraft, no SW or AEH should be loaded nor analogic instruments be exchanged with digital instruments or MFD.

5. Manuals

Amend 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.

Standard Change CS-SC101a

INSTALLATION OF EMERGENCY LOCATOR TRANSMITTER (ELT) EQUIPMENT

1. Purpose

Installation or exchange ELT equipment. This SC does not include installation of antennas.

2. Applicability/Eligibility

Aeroplanes with MTOM below 2 730 kg, rotorcraft not being complex motor-powered aircraft with MTOM below 1 200 kg and four or less occupants, and any ELA2 aircraft.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43-13-2B, Chapter 1 and 2.

Additionally, the following applies:

- Instructions from equipment manufacturer have to be followed.
- A position for the installation needs to be chosen avoiding shielding by carbon layers.
- It must be ensured that the equipment is installed in a way that, in case of a crash, it is unlikely that the antenna would be detached from the transmitter.
- The equipment is authorised in accordance with ETSO-2C126, ETSO-C126a or later amendments, or the equipment is qualified according to the applicable ETSO/JTSO or equivalent.
- The ELT is considered a passive device whose status is on standby until it is required to perform its intended function. As such, its performance is highly dependent on proper installation and post-installation testing. Guidance on this subject is contained in RTCA DO-182, *Emergency Locator Transmitter (ELT) Equipment Installation and Performance* or in Chapter 6 of EUROCAE ED-62A, *Minimum operational performance specification for aircraft emergency locator transmitters 406 MHz and 121.5 MHz (Optional 243 MHz)*.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

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 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.

7. Registration of the ELT

The ELT has to be registered in the national Cospas-Sarsat register in accordance with the procedures published by the State of Registry.

Standard Change CS-SC151a

INSTALLATION OF HEADRESTS

1. Purpose

A significant portion of the existing sailplane and powered-sailplane fleet is not equipped with headrests as required by newer certification specifications. The intention of this SC is to enable the simple adaption and installation of headrests and backrests with integrated headrests that are available for similar designs using established practice.

2. Applicability/Eligibility

Sailplanes and powered sailplanes as defined in ELA2.

3. Acceptable methods, techniques and practices

- The headrest and its parts are installed and manufactured according to the design data in compliance with CS 22.788 'Headrests'.
- Modified attachments are assessed or tested against loads referred to in CS 22.788.
- Interference with controls needs to be assessed, also for the empty seat in case of a two-seater.
- Adaptions are made using established repair practices, as described in:
 - the maintenance or repair manual;
 - 'Kleine Fiberglas Flugzeug Flickfibel' by Ursula Hänle³; and
 - FAA AC 43.13-2B/1B.

4. Limitations

N/A.

5. Manuals

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.

³ Available under <http://www.dg-flugzeugbau.de/flickfibel-d.html>. Also available in English under the title 'Plastic Plane Patch Primer'.

Standard Change CS-SC152a

CHANGES TO SEAT CUSHIONS INCLUDING THE USE OF ALTERNATIVE FOAM MATERIALS

1. Purpose

Installation of alternative materials in the construction of the seat cushions. For the refurbishment of seats with new seat cushions, alternative foam materials can be used.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft, and any ELA2 aircraft.

This SC is not applicable for installation in/on dynamically tested seats (according to CS 23.562 or equivalent).

Note: In case of uncertainty, check with the TC or STC holder.

3. Acceptable methods, techniques and practices

For aeroplanes, all materials used in the construction of seat cushions must be flame resistant. Flame resistance can be demonstrated according to FAA Advisory Circular AC 23-2A, or, alternatively, such materials must pass the flammability test according to Appendix F, Part I of CS-25 (see FAA Advisory Circular AC 23-17C, paragraph 23.853). Each material used in the construction of seat cushions must meet the above flammability tests separately.

Materials (including foam materials) that will be used in sailplanes or powered sailplanes do not have to meet flammability requirements.

To improve occupant safety, it is recommended to use energy-absorbing foams in the construction of seat cushions. Energy-absorbing foam materials have the potential to reduce the possibility of spine injuries in case of hard landings or minor crash landing.

Additionally, the following applies:

- The design of exchange seat cushions should follow the geometrical dimension of the original seat cushion.
- In case the geometrical dimensions are altered, it must be ensured that access to and egress from the seat will not be altered. On pilot seats, it must be ensured that the cushion has no influence on the use of any of the controls.

4. Limitations

N/A.

5. Manuals

N/A.

6. Release to service

This SC may be released by the Pilot-owner subject to compliance with AMC M.A.801 and only in the case of sailplanes and powered sailplanes.

Standard Change CS-SC153a

EXCHANGE OF SAFETY BELTS/TORSO RESTRAINT SYSTEMS

1. Purpose

Exchange of safety belts/torso restraint systems.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft, and any ELA2 aircraft.

This SC is not applicable for installation in/on dynamically tested seats (according to CS 23.562 or equivalent).

Note: In case of uncertainty, check with the TC or STC holder.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43-13-2B, Chapter 9.

Additionally, the following applies:

- the equipment is authorised according to the applicable ETSO/JTSA or equivalent;
- the equipment is compatible with the existing installation and attachment points;
- the equipment is qualified for the environmental conditions to be expected during normal operation; and
- instructions and tests defined by the equipment manufacturer have to be followed.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

5. Manuals

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.

Standard Change CS-SC201a

EXCHANGE OF POWERPLANT INSTRUMENTS

1. Purpose

Exchange of powerplant instruments with new ones applicable to:

- temperature instruments;
- fuel and oil quantity instruments;
- fuel flowmeters;
- manifold pressure instruments;
- tachometer (RPM);
- pressure instruments; and
- carbon monoxide detector instruments.

This SC does not permit the installation of digital multifunction displays.

2. Applicability/Eligibility

Piston engine aeroplanes with MTOM below 2 730 kg and ELA2 aircraft.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

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

Additionally, the following applies:

- the instrument is authorised according to the applicable ETSO/JTSO or equivalent;
- the instrument has the same functionality, is installed at the same location, and is compatible with the existing installation;
- display of information is consistent with the overall flight deck design philosophy;
- the instrument is suitable for the environmental conditions to be expected during normal operation;
- the indicators have the required markings (e.g. limits, operating ranges) of the original instrument;
- selection/calibration of the instrument must be such that, under the same conditions, the indications provided by the old and the new instrument are the same;
- instructions and tests defined by the instrument manufacturer have to be followed; and

- the instrument should provide the measurement of the related magnitude in the same units as the exchanged instrument or other units when such units are used in the AFM and the related placards have been updated as necessary.

4. Limitations

Any limitations defined by the instrument manufacturer apply.

Any limitations of the existing installation remain valid.

5. Manuals

Amend AFM with AFMS containing or referencing the instrument's 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.

Standard Change CS-SC202a

USE OF AVIATION GASOLINE (AVGAS) UL 91

1. Purpose

Unleaded Avgas UL 91 (according to ASTM D7547 or Def Stan 91-90) may be used if approved for the particular engine types and the installation at aircraft level is already approved for operation with conventional Avgas or Motor Gasoline (Mogas).

Avgas UL 91 may also be used in all engines and aircraft types approved for use with Mogas RON 95 (MON 85) in accordance with Standard EN 228.

Even if approved for the engine, the operation with Avgas UL 91 is a modification at aircraft level, and placards and manuals have to be amended which could be done using this SC.

2. Applicability/Eligibility

Aeroplanes other than complex motor-powered aircraft, and powered sailplanes with spark-ignited piston engines using Avgas or Mogas.

3. Acceptable methods, techniques and practices

To enable the use of unleaded Avgas UL 91 with this SC, the following conditions are to be met:

- the engine installed on the aircraft is approved for use of unleaded Avgas UL 91 and the aircraft is already approved for operation with conventional Avgas (according to ASTM D910, Def Stan 91-90, Mil-G-5572, GOST1012-72 or equivalent) or Mogas; or
- the engine as well as the aircraft are approved for operation with Mogas RON 95 (MON 85) in accordance with standard EN 228;
- the installed engine has not been modified and meets the specifications of the original engine Type Certificate; and
- placards are installed/amended as needed to allow the use of the approved fuels.

Warning 1:

Use of unleaded Avgas UL 91 in engines that have not been approved for its use may cause extensive damage to the engine or lead to in-flight failure due to the lower Motor Octane Number (MON) of the fuel, compared to Avgas 100LL.

Warning 2:

This SC is not intended for approving the use of automotive fuel.

4. Limitations

None.

5. Manuals

Amend AFM with AFMS introducing the aircraft operation with unleaded Avgas UL 91.

6. Release to service

The Pilot-owner may release to service the aircraft after embodiment of this SC, subject to compliance with AMC M.A.801.

Standard Change CS-SC203a

USE OF AVIATION GASOLINE (AVGAS) HJELMCO 91/96 UL AND 91/98 UL

1. Purpose

Unleaded Avgas Hjelmc0 91/96 UL and 91/98 UL (meeting the requirements of MIL-G-5572 and ASTM D910 for grade 91/96 and 91/98 fuel (except of colour), as well as the requirements of ASTM D7547 and Def Stan 91-90) may be used if approved for the particular engine types, and the installation at aircraft level is already approved for operation with conventional Avgas or Motor Gasoline (Mogas).

Avgas Hjelmc0 91/96 UL and 91/98 UL may also be used in all engines and aircraft types approved for use with Mogas RON 95 (MON 85) or RON 98 (MON 88) in accordance with Standard EN 228.

Even if approved for the engine, the operation with Avgas 91/96 UL or 91/98 UL is a modification at aircraft level, and placards and manuals have to be amended. This could be done using this SC.

2. Applicability/Eligibility

Aeroplanes other than complex motor-powered aircraft and powered sailplanes with spark-ignited piston engines using Avgas or Mogas.

3. Acceptable methods, techniques and practices

Before releasing the use of unleaded Avgas Hjelmc0 91/96 UL and 91/98 UL with this SC, the following conditions are to be met:

- the engine installed on the aircraft is approved for use of unleaded Avgas 91/96 UL or 91/98 UL (or UL 91) and the aircraft is already approved for operation with conventional Avgas (according to ASTM D910, Def Stan 91-90, Mil-G-5572, GOST1012-72 or equivalent) or Mogas, or;
- the engine as well as the aircraft are approved for operation with Mogas RON 95 (MON 85) or RON 98 (MON 88) in accordance with standard EN 228;
- the installed engine has not been modified and meets the specifications of the original engine Type Certificate; and
- placards are installed/amended as needed to allow the use of the approved fuels.

Warning 1:

Use of unleaded Avgas 91/96 UL or 91/98 UL in engines that have not been approved for their use may cause extensive damage to the engine or lead to in-flight failure due to the lower Motor Octane Number (MON) of the fuel, compared to Avgas 100LL.

Warning 2:

This SC is not intended for approving the use of automotive fuel.

4. Limitations

None.

5. Manuals

Amend AFM with AFMS introducing the operation of unleaded Avgas Hjelmcø 91/96 UL and 91/98 UL (unless the use of Avgas UL91 is already approved).

6. Release to service

The Pilot-owner may release to service the aircraft after embodiment of this SC, subject to compliance with AMC M.A.801.

Standard Change CS-SC204a

INSTALLATION OF EXTERNAL POWERED ENGINE PREHEATER

1. Purpose

This change is related to the installation of engine preheating systems that are externally powered and not connected to the aircraft electrical system. These preheating systems do not function during flight. The consideration with respect to safety of flight is that the preheating system neither interferes with functional equipment nor comes loose or detached and creates some other flight hazard. The engine preheater is installed on a non-functional, non-hazardous basis.

2. Applicability/Eligibility

Aeroplanes other than complex motor-powered aircraft, rotorcraft not being complex motor-powered aircraft, and piston engine powered sailplanes.

3. Acceptable methods, techniques and practices

Installation of the preheating system in accordance with the installation instructions of the equipment manufacturer.

4. Limitations

None.

5. Manuals

Amend AFM with AFMS explaining the operation of the engine preheating system.

6. Release to service

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

Standard Change CS-SC251a

INSTALLATION OF AN ANGLE OF ATTACK (AOA) INDICATOR SYSTEM

1. Purpose

This SC applies only to a supplemental AoA indicator system, not to the AoA system required for the aircraft type certification.

2. Applicability/Eligibility

Sailplanes, powered sailplanes and aeroplanes not considered complex motor-powered aircraft.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Memo AIR100-14-110-PM01.

Additionally, the following applies:

- the installation of the system neither requires an interface with the pitot-static system nor relies on direct pressure input from the pitot-static system;
- the probe is located in such a way that it interferes neither with the functioning of the flight controls nor with the pitot-static system or aircraft stall warning system;
- accuracy of stall indication coincides with existing stall warning;
- the installed AoA indicator system shall not interfere negatively with previously installed stall warning or AoA systems;
- the installation of the probe is in a non-pressurised area, preferably on an inspection panel;
- the system is not used as an input source to any other system, such as an autopilot, stick pusher, envelope protection system or comparable function, unless certified separately;
- the installation and electrical wiring is installed in accordance with acceptable practices such as the aircraft maintenance manual or FAA Advisory Circulars AC 43.13-1B and AC 43.13-2B;
- the system is suitable for the environmental conditions to be expected during normal operation; and
- instructions and tests defined by the system manufacturer have to be followed.

4. Limitations

The provided information is used in an advisory or supplementary manner (no hazard, no credit basis).

No operational credit may be taken for the installation, such as reduced stall speeds, reduced approach speeds, reduced take-off or landing distances, etc.

Any limitations defined by the AoA system manufacturer apply. Install the limitation placards, as required.

5. Manuals

The AFMS shall, at least, contain:

- the system description, operating modes and functionality;
- limitations, warnings and placards; and
- emergency and normal operating procedures .

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.

Standard Change CS-SC401a

EXCHANGE OF BASIC FLIGHT INSTRUMENTS

1. Purpose

Exchange of basic flight instruments with new equipment applicable to:

- airspeed instruments;
- turn and slip instruments;
- bank and pitch instruments;
- direction instruments;
- vertical velocity instruments; and
- pressure-actuated altimeter instruments.

This SC does not entitle the installation of digital multifunction displays.

2. Applicability/Eligibility

Aeroplanes not being complex motor-powered aircraft, and any ELA2 aircraft with a maximum flight altitude below FL 280.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA AC 43-13-2B, Chapter 11.

Additionally, the following applies:

- the instrument is authorised according to the applicable ETSO/JTSO or equivalent;
- the instrument has the same functionality, is installed at the same location, and display of information is consistent with the overall flight deck design philosophy;
- the instrument is suitable for the environmental conditions to be expected during normal operation;
- the indicators have the required markings (e.g. limits, operating ranges) of the original instrument;
- selection/calibration of the instrument must be such that, under the same conditions, the indications provided by the old and the new instrument are the same;
- instructions and tests defined by the equipment manufacturer have to be followed; and
- the instrument should provide the measurement of the related magnitude in the same units as the exchanged instrument or other units when such units are used in the AFM and the related placards have been updated as necessary.

4. Limitations

Any limitations defined by the instrument manufacturer apply.

Any limitations of the existing installation remain valid.

5. Manuals

Amend AFM with AFMS containing or referencing the instrument's 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.

Standard Change CS-SC402a

INSTALLATION OF SAILPLANE EQUIPMENT

1. Purpose

Installation of gliding equipment considered as a 'standard part' in accordance with AMC 21.A.303 (c) 2 (i.e. electrical variometers, bank/slip indicators ball type, total energy probes, capacity bottles (for variometers), final glide calculators, navigation computers, data loggers, barographs, cameras and bug wipers).

The installation of external antennas or additional batteries is not covered by this SC.

2. Applicability/Eligibility

Sailplanes and powered sailplanes, as defined in ELA2.

3. Acceptable methods, techniques and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43.13-2B.

Additionally, the following applies:

- the design of the equipment installation must take into account crashworthiness, arrangement and visibility, interferences with other equipment, the canopy jettison and the emergency exit;
 - the design of the equipment installation must take into account the structural integrity of the instrument panel or any other attachment point. Special consideration is necessary for equipment installed at a location behind the occupant(s);
 - a data bus/data connectivity between the installed equipment and other equipment which is:
 - ETSO authorised (or equivalent), or
 - required by the TCDS, AFM or POH,
 - required by other applicable requirements such as those for operations and airspace, or
 - mandated by the respective MEL, if this exist;
- is not allowed unless the equipment being installed is explicitly listed as compatible equipment by the manufacturer of the equipment to be connected to;
- fuses or circuit breakers are to be used when connecting the sailplane equipment with the electrical system;
 - the electrical load of the installed sailplane equipment should be considered; in case of a powered sailplane equipped with a generator by an electrical load analysis;
 - a switch is required which allows to turn off the installed equipment independently;
 - instructions and tests defined by the equipment manufacturer have to be followed; and

- the equipment is suitable for the environmental conditions to be expected during normal operation.

4. Limitations

- The provided information is used in an advisory or supplementary manner (no hazard, no credit basis).
- Any limitations defined by the equipment manufacturer apply.

5. Manuals

The AFMS shall, at least, contain:

- the system description, operating modes and functionality;
- the limitations and, warnings;
- the emergency and normal operating procedures and limitations; and
- instructions for software and database updates.

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.

SUBPART C — STANDARD REPAIRS

LIST OF STANDARD REPAIRS

CS-SR801a — Aircraft Repair according to FAA Advisory Circular AC 43.13-1B

CS-SR802a — Repair of Sailplanes, Powered Sailplanes, LSA and VLA

Standard Repair CS-SR801a

AIRCRAFT REPAIR ACCORDING TO FAA ADVISORY CIRCULAR AC 43.13-1B

1. Purpose

This SR is issued to allow the use of FAA Advisory Circular AC 43.13-1B for repairs of aircraft with metal, composite, wood and mixed structure.

Note: Classification of the repair according to the AC is not required for SRs.

2. Applicability/Eligibility

Aeroplanes 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 43-13-1B together with AC 43.13-2B, Chapter 1.

4. Limitations

- The person responsible for the design of the repair must be familiar with the applicable airworthiness requirements to determine that the repair data developed from AC 43.13-1B is appropriate for the product being repaired.
- This SR data is not applicable to metallic structure on products whose certification basis or an applicable AD includes damage tolerance based requirements.
- Where suitable TC holder approved repair data exists, this should be used before a SR is considered.
- This SR data is not applicable to critical parts, as defined in the manufacturers' data.
- For bonded repairs, the SR should not exceed a size above which the limit load cannot be sustained if the repair fails. This can be alleviated in the case of ELA1 aircraft if the person responsible for the repair has sufficient experience in the design data, materials, process, repair size and aircraft configuration.

Note: where there is any doubt as to whether following AC 43.13-1B will result in compliance with the applicable requirements, instead of applying this SR, a repair design approval in accordance with Part-21 should be obtained. Particular attention should be paid to repair designs where there is a risk of adversely affecting fatigue or aeroelastic characteristics and the recommendations of AC 43-13-1b should be followed.

5. Manuals

Assess if the repair could require the issuance of an AFMS.

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

6. Release to service

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

Standard Repair CS-SR802a

REPAIR OF SAILPLANES, POWERED SAILPLANES, LSA AND VLA

1. Purpose

This SR is issued to allow the use of established practice for the repair of metal, composite, wood and mixed structures of light aircraft.

2. Applicability/Eligibility

Sailplanes and powered sailplanes, as defined in ELA2, LSA, and VLA.

3. Acceptable methods, techniques and practices

Any of the following standards contain acceptable data:

for composite structures:

- , 'Kleine Fiberglas Flugzeug Flickfibel' by Ursula Hänle⁴, and

for wooden and mixed structures on sailplanes and powered sailplanes:

- 'Standard Repairs to Gliders' by the British Gliding Association⁵, or
- , 'Werkstattpraxis für den Bau von Gleit- und Segelflugzeugen' by Hans Jacobs.

4. Limitations

- The person responsible for the design of the repair must be familiar enough with the applicable airworthiness requirements to determine that the repair data developed from the references in paragraph 3 above is appropriate to the product being repaired.
- Where suitable TC holder approved repair data exists, this should be used before a SR is considered.
- For bonded repairs, the SR should not exceed a size above which the limit load cannot be sustained if the repair fails, unless the person responsible for the repair is sufficiently experienced with the design data, materials, process, repair size and aircraft configuration.

Note: where there is any doubt as to whether following the references in paragraph 3 will result in compliance with the applicable requirements, instead of applying this SR, a repair design approval in accordance with Part-21 should be obtained. Particular attention should be paid to repair designs where there is a risk of adversely affecting fatigue or aeroelastic characteristics and the recommendations of the references should be followed.

⁴ Available under <http://www.dg-flugzeugbau.de/flickfibel-d.html>. Also available in English under the title 'Plastic Plane Patch Primer'.

⁵ Available under <https://members.gliding.co.uk/library/standard-repairs-to-gliders>.

5. Manuals

Assess if the repair could require the issuance of an AFMS.

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

6. Release to service

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