

IRWORTHINESS COMPLIANCE CHECKLIST :

RELOCATION OF CIRCUIT BREAKER AND ELECTRICAL PANELS

I HAVE DETERMINED THE PLANNED ALTERATION TO BE IN COMPLIANCE WITH PARAGRAPH C, CHECKLIST APPLICABILITY.

IA SIGNATURE _____ DATE _____

AIRCRAFT MAKE _____ MODEL _____

SERIAL # N# _____

TABLE 1-1. Relocation of Circuit Breaker and Electrical Panels - Checklist Qualifications for DER Data Review

| Item [1] Completed Initials | Planned FAA Approval Method Pick 1, [2] | | | Subject Evaluated | (14 CFR) | (CAR) | Item to Consider or Intent of the regulation | DER Authorit y [3] (ref. 8110.37 | Other Guidance | |
|-----------------------------------|--|---------------------------|------------------------|--|----------|--------------|--|---|------------------------|--------------------|
| | DER 8110- 3 | FSDO ASI, 337, Block 3 | Other (AC 43.13) | | | | | | AC Orders Policy | AC 43- 13-1B/2A |
| | | | | Loads | 23.301 | 3.171 | <ul style="list-style-type: none"> Limit load is maximum in service Analysis to LIM must produce no yield. | | | |
| | | | | Factor of Safety | 23.303 | 3.172 | <ul style="list-style-type: none"> Ultimate = Limit load * 1.50 (50% margin of safety) | | | |
| | | | | Strength and deformation | 23.305 | 3.173 | <ul style="list-style-type: none"> Load test to Limit is okay structure not deform permanently. DO NOT TEST TO ULTIMATE conditions for flight test article. If tested to ultimate conditions the article must be thrown out or be tested to verify integrity. | | | |
| | | | | Proof of Structure | 23.307 | 3.174 | <ul style="list-style-type: none"> Limit loads are determined by flight manual, gust and landing loads. For lack of this data the loads from 23.561 may be used (but not required). | | | |
| | | | | Design and Construction, General | 23.601 | 3.291 | <ul style="list-style-type: none"> The suitability of each questionable design detail and part having an important bearing on safety in operations, must be established by tests. | | | |
| | | | | Materials and Workmanship | 23.603 | 3.292 | <ul style="list-style-type: none"> All materials must meet suitable specifications. | | | |
| | | | | Inspection Provisions | 23.611 | 3.296 | <ul style="list-style-type: none"> Inspection and servicing must be accomplished in an appropriate manner. Are reasonable means provided for inspection and servicing. | | | |
| | | | | Function and Installation | 23.1301 | 3.652, | <ul style="list-style-type: none"> Additional equipment installed (per operating rules) must meet intended function. | | | |
| | | | | Electrical system capacity | 23.1351 | 3.636(b) | <ul style="list-style-type: none"> Each electrical system must be adequate for the intended use. Electric power sources, their transmission cables, | | | |

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|--|--|--|--|--------------------------------|---------|-------------------------|--|--|--|--|
| | | | | | | | and their associated control and protective devices, must be able to furnish the required power at the proper voltage to each load circuit essential for safe operation | | | |
| | | | | Circuit protective devices. | 23.1357 | 3.690 3.691 3.692 | <ul style="list-style-type: none"> • A protective device for a circuit essential to flight safety may not be used to protect any other circuit. • If the ability to reset a circuit breaker or replace a fuse is essential to safety in flight, that circuit breaker or fuse must be so located and identified that it can be readily reset or replaced in flight. • e) For fuses identified as replaceable in flight-- <ul style="list-style-type: none"> (1) There must be one spare of each rating or 50 percent spare fuses of each rating, whichever is greater; and (2) The spare fuse(s) must be readily accessible to any required pilot.] | | | |
| | | | | Electric cables and equipment. | 23.1365 | 3.693 | <ul style="list-style-type: none"> • Each electric connecting cable must be of adequate capacity. • Any equipment that is associated with any electrical cable installation and that would overheat in the event of circuit overload or fault must be flame resistant. That equipment and the electrical cables must not emit dangerous quantities of toxic fumes. • Cables should meet MIL-DTL-27500 or Equivalent specification | | | |

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TABLE 1-2. DER Signatures

a. Checklist Table. This checklist is issued for guidance purposes to help show completeness of documentation for the FAA field approval and return to service process. The checklist is intended to provide guidance information during the process of approving the relocation of existing circuit breaker and electrical panels and then returning the airplane to service. An airplane modification is eligible to use this checklist when it has met the requirements outlined in paragraph 8 of this AC.

b. Approval. Modifications meeting the scope described in paragraph ‘c’ may be approved by using this checklist and completing FAA Form 337. The IA can approve this modification and the airplane incorporating it for return to service using DER data entirely approved by completing Block 7, “Approval for Return to Service” of FAA Form 337. The FAA usage of Block 3, “For FAA Use Only” will not be required to accomplish this checklist for modifications, which falls within the scope of paragraph c providing that no data approval is required by AFS/ASI.

c. Airworthiness Compliance Checklist Applicability. This checklist is to be used only on repairs or alterations to:

- Airplanes 6,000 pounds or less maximum gross weight
- Airplanes having a single, naturally aspirated reciprocating piston engine
- Unpressurized airplanes.

d. Checklist Use. Inspect the alteration criteria and examine its supporting data to verify that they meet the following criteria:

(1) Existing circuit breaker or electrical panels are retained. They are simply moved to a new location. There are no new panels installed.

(2) Appropriate operations advisory information should be included in the Aircraft Flight Manual (AFM) of Flight Manual Supplement (FMS).

NOTE 1

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This checklist is not applicable to modifications requiring revision of the FAA approved Limitations section of the AFM or FMS. Please contact FAA Flight Standards District Office (FSDO) or Aircraft Certification Office (ACO) representatives for modifications requiring revision of the Limitations section. However, in accordance with 14 CFR, part 23, § 23.1581 (b)(2)(ii), Operational advisory information as prescribed in §§ 23.1585 through 23.1589, may be inserted into the AFM or FMS in a manner acceptable to the administrator. The FAA has determined that, for modifications within the scope described on this checklist, operational advisory information can be inserted into the AFM or FMS if it is determined to be acceptable by the IA. The IA's finding should include consideration of information provide by applicable equipment manufactures, if available.

(3) The circuit breaker panel or electrical panel must be as readily accessible and visible to the pilot in its new location as it was in its previous location. It should comply with 14 CFR, part 23, § 23.1357, CAR, § 3.691.

(4) Any additional Instructions for Continued Airworthiness (ICA) are properly documented per 14 CFR, part 23, § 23.1529 requirements.

e. Necessary Approvals.

(1) DER's should initial all applicable items in Table 1-1, "Checklist and Qualifications for DER Data Review".

(2) DER's should sign the table in Table 1-2, "DER Signatures".

(3) DER's show evidence of DER authority as required in paragraph g.

(4) DER's show compliance to any additional DER identified requirements in Table 1-1.

(5) DER's selects and identifies applicable regulations based on certification basis of airplane.

(6) When all FAA Form 8110-3's are complete, give originals along with the completed FAA Form 337 to local FSDO office.

(7) An ACO Engineer or FSDO Inspector may sign in place of any DER signature.

(8) When indicated on individual checklists A & P and IA's signatures can be substituted

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- f. Applicable Guidance Material.**
- g. Evidence of DER Authority to Approve.**
- h. Complete Checklist Process.** Send a copy of the completed checklist and reporting data to the local FSDO office which will, in turn, forward it to the FAA Aircraft Registration Branch, Oklahoma City, Oklahoma, for inclusion in the aircraft record. Submit originals to the aircraft owner or operator to be kept with the aircraft records.

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