

# Questions & Answers

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1

## Questions #1

Q: Which DER discipline (Seat Dynamic Test or Interior Arrangements) is responsible for finding compliance to FAR 25.562(a)? If both are responsible, which aspects of the paragraph should each discipline address?

A: FAA letter 120S-01-212, dated March 12, 2001 provides guidance. The Seattle ACO has the expectation that the delineation of responsibility between these two DER disciplines is as follows:

Section 25.562(a) - The Interior Arrangement DER's are responsible for finding compliance with this requirement. It is the expectation of the SACO that the Interior Arrangement DER's will accomplish this by reviewing the seat installations during the Interior Compliance inspection. This will require that the Interior Arrangement DER's verify that each occupant has enough room to properly sit in their seat and can access and make use of the seat belts that are provided.

2

## Question #1 cont'

Sections 25.562(b) and (c) - The § 25.562 DER's are responsible for all compliance findings related to these requirements, except as noted below.

Sections 25.562(c)(5), (c)(6), (c)(8) - These requirements pertain to head injury criterion, femur loads and deformation limitations, and the compliance responsibility is to be shared between the § 25.562 DER's and the Interior Arrangement DER's. It is the expectation of the SACO that the § 25.562 DER's will witness the testing, and oversee collection of all of the test data necessary to make a compliance finding; the Interior Arrangement DER's will use this data to find compliance for the installation dependent aspects of the seating configuration installed on the airplane. This typically includes verifying front row setbacks, seat pitches, checking deformations into aisles, assist spaces, projected exit openings, passageways, etc. The Interior Arrangement DER's must also assess any egress concerns resulting from seat components that may have deployed during dynamic testing.

3

## Question #2

**Q:** What requirements for deflections must be considered for installation configurations where 16g seats may contact 16g seats, especially with regard to seat-to-seat dynamic load sharing and HIC? Also, what requirements must be considered for installation configurations where 16g seat-to-9g monument contact may occur, especially with regard to HIC?

**A:** All 25.561 and 25.562 requirements must still be met.

- Ensure that the head path clears or run HIC tests.
- Seat-to-seat load sharing need not be considered structurally as long as design includes appropriate clearance.

4

## Question #3

Q: FAA Memorandum “Standard Content and Format for the Installation Instructions and Limitations Required by TSO-C127a,” dated September 8, 2003, states “A TSO article installed in accordance with an IIL as described in this memorandum should be subjected only to a determination that the article complies with the IIL. It is not necessary to investigate the data supporting the information approved in the IIL under the TSO approval.” The DERs’ understanding of this statement is that if the data required to approve an installation are included in the IIL, then further review of the data in the dynamic test report is not required to approve the installation. Is this understanding correct?

A: This is correct. For the requirements of the TSO that are coextensive with the Part 25 requirements no further review beyond the IIL is necessary to make the Part 25 finding of compliance.

5

## Question #4

Q: What paperwork defines that “B” allowables are appropriate for Interiors Structures?

A: There is nothing that explicitly states that B allowables are appropriate for interior structures.

Per 25.613(b), design values must be chosen to minimize the probability of structural failures due to material variability. Compliance must be shown by selecting design values which assure material strength with the following probability:’

- (1) Where applied loads are eventually distributed through a single member within an assembly, 99% probability with 95% confidence.
- (2) For redundant structure. . .90% probability with 95% confidence.

6

## Question #5

Q: What FARs should be listed on the 8110-3 for the monument abuse load test plan and report? Please clarify

A: There is no general FAA requirement or policy for monument abuse load testing.

7

## Question #6

Q: What are the criteria for dynamic testing for the interior monuments, and when it is applicable? I believe that this is required when the attendant seat is attached to the monument. Please clarify.

A: Monument testing is only performed if the monument is determined to be part of a seat support (e.g. partition-like monument) or where the design was not envisioned during the promulgation of the rule (e.g. overhead crew rests). In this case only static load coupon testing is required. The monuments are not subjected to dynamic testing.

8

# Questions & Answers

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9

## Question #7

Q: Should a test witness expect to see a completed 8100-1 before starting a test?

A: Yes.

FAA Order 8110.4B, Paragraph 2-11, “An FAA conformity inspection should be successfully conducted before any official FAA tests (ground or flight) are conducted.”

10

## Question #8

Q: If the test plan states that certain parts will not be installed (i.e. electrical wiring, plumbing, etc) and they are still on the drawing, does the inspector need to call these as unsat on the 8100-1?

A: The inspector is required to execute the conformity as defined on the 8120-10, Request for Conformity.

- If the RFC conforms per the test plan which lists the missing parts then there are no unsats. It is important to specify the proper engineering data.
- If the RFC only conforms per installation design data but there are missing parts then these missing parts must also be listed on the 8130-9 under Deviations. Those deviations are to be coordinated with the FAA Project manager and must be dispositioned on the 8100-1, Conformity Inspection Record.

11

## Question #9

Q: Refurbishing a test article for production. How should this be handled? Some DERs specify on the test report 8110-3 that the approval excludes responsibility for refurbishing. What if supplier does not address refurbishing in the test plan? Are the DERs still responsible?

A: Refurbishing a test article for production is not part of the type design approval process, therefore, it is not the responsibility of any DER. If it is included in a test plan or report, then an exclusion note on the 8110-3 is acceptable.

12

## Question #10

Q: Disposition of UNSATS on the 8100-1: What is the preferred method to record the disposition? Some DERs write it on a copy of the 8100-1 and fax this back to the test site. Others prefer that the disposition be recorded in the test plan. Some prefer a rejection tag. What does the FAA suggest?

A: Per FAA Order 8110.4B: “Any nonconformities found as a result of the conformity inspection require ACO project engineer or authorized DER disposition on FAA Form 8100-1.”

13

## Question #11

Q: Per FAA letter [ref 120S-02-1009] the phrase “or latest revision” may be used on the 8120-10 Request for Conformity form. This adds more time to the DER’s review of conformity paperwork at the time of the test, and places unrealistic expectations on the DER. Would the FAA please comment?

A: MIDO Policy:

Accept FAA Form 8120-10, issued by the ACOs with a specific cited drawing revision **with or without** “or later FAA approved revision.”

Perform the conformity and if there is a difference in revision than the one specified, call the FAA Project Manager (PM)/DER listed on the RFC to confirm that the revision presented is consistent with the submitted engineering data that the PM/DER holds.

On the FAA Form 8100-1 comments section add a note that the revision was coordinated with the FAA PM/DER, contact was made and acknowledged with the specified FAA revision for the conformity.

14

## Question #11 cont'

Mark the item "satisfactory" (if it meets the design data to the coordinated revision) based on the coordination with the FAA PM/DER.

At times, the FAA Form 8120-10 lists a DER who has the disposition authority, this authority can provide an approval of the revision level as an alternate to the PM/project DER.

If the PM/DER cannot be contacted, perform and complete the conformity presented by the applicant and mark the item "unsatisfactory" to be cleared by the PM/DER at a later date. On the FAA form 8100-1 comment section, note that the PM/DER could not be contacted. Follow-up calls to the PM/DER should be made by the ACO coordinator or assigned PI of the designee.

Complete and submit the final conformity package per FAA Order 8110.4

15

## Question #12

Q: FAR 25.605 states that the method of fabrication must produce a consistently sound structure and must be performed under an approved process specification. Furthermore FAA Order 8110.4B reads, the applicant should be encouraged to submit their process specification for approval early in the program. They should be reminded that a TC or STC cannot be issued until all processes are reviewed. It is my understanding that all processes must be approved. Approving type design does not imply approval of the processes called out. If the process is not approved, then separate approval is required.

A: Process specifications are typically approved by the DERs/FAA as part of the Type Design descriptive data when listed on the drawings. The same is true if they are called out in substantiation documents (analyses, test plans, test reports). They must be part of the drawing or documentation tree and not just "referenced." They are not approved individually.

16

## Question #13

Q: What is the criteria for using double latch for the monuments?  
Only to the forward facing doors that contains items of mass?

It is my understanding that double latch mechanism is the mechanism that has one redundant latching capability. Please clarify

A: Paragraph 121.311(f) requires compliance with Paragraph 25.785 at amendment 25-51. Advisory Circular 25.785-1A, Paragraph 7(b) specifies that if a flight attendant seat is located **three rows fore or aft** from center of a galley or stowage compartment then dual latching or equivalent is required to retain all items of mass in galley or stowage compartment.