

JAA Administrative & Guidance Material
Section Six: Synthetic Training Devices (STD/FSTD), Part Three: Temporary Guidance Leaflet

LEAFLET NO. 11: **USE OF FOOTPRINT TESTS IN JAR-STD 1A QUALIFICATION TEST GUIDE SUBMISSIONS**

NOTE: The material contained in this Leaflet has been issued in accordance with Chapter 9 of the Administrative & Guidance Material Section Six: Synthetic Training Devices (STD), Part Two: Procedures (JAR-STD). The purpose of this leaflet is to give information and guidance on the acceptance by the Authorities of the use of footprint tests in QTG's submitted in support of a simulator qualification.

1. Introduction

- 1.1 Recent experience during initial qualification of some full flight simulators to JAR-STD 1A has required acceptance of increasing numbers of footprint tests. This is particularly true for simulators of smaller or older aircraft types, where there may be a lack of aircraft flight test data. TGL 8 accepts the use of footprint tests as validation data within the hierarchy specified. However, the large number of footprint tests offered in some QTG's has given rise to concern. The different and, in some areas increased number of QTG tests required by Amendment 3 has exacerbated the problem.
- 1.2 Although this TGL is only applicable to JAR-STD 1A, the advice and guidance provided is equally applicable to synthetic training devices (STD's) qualified in accordance with the requirements of JAR-STD 2A, 1H and 2H.

2. Terminology

- 2.1 Footprint test - Footprint test data from the actual training STD requiring qualification validated by NAA appointed pilot subjective assessment. The result obtained is said to be the footprint validation data for the STD.

3. Recommendation

- 3.1 JAR-STD 1A permits the use of footprint data where flight test data is not available. TGL 8 of this part details the circumstances under which other forms of validation data may be accepted when flight test data is not available. Only when all other alternative possible sources of data have been thoroughly reviewed without success may a footprint test be acceptable, subject to a case by case review with the Authorities concerned taking into consideration the level of qualification sought for the STD.
- 3.2 Footprint test data should be:
- Constructed with initial conditions and simulator set up in the appropriate configuration (e.g. correct engine rating) for the required validation data
 - A manoeuvre representative of the particular aircraft being simulated
 - Manually flown out by a type rated pilot who has current experience on type (see Note 1) and is deemed acceptable by the Authority (see Note 2)
 - Constructed from validation data obtained from the footprint test manoeuvre and transformed into an automatic test
 - An automatic test run as a fully Integrated test with pilot control inputs
 - Automatically run for the Initial Qualification and recurrent evaluations

Note 1: In this context, CURRENT refers to the pilot experience on the aircraft, and not to the FCL standards.

Note 2: The same pilot should sign off the complete test as being fully representative.

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- 3.3 A clear rationale should be included in the QTG for each footprint test. These rationales should be added to and clearly recorded within the Validation Data Road map (VDR) in accordance with and as defined in Appendix 2 to ACJ No. 1 to JAR-STD 1A.030.
- 3.4 Where the number of footprint tests is deemed by the Authority to be excessive, the maximum level of Qualification may be affected. The Authority should review each area of validation test data where the use of footprint tests as the basis for the validation data, is proposed. Consideration should be given to the extent to which footprint tests are used in any given area. For example, it would be unacceptable if all or the vast majority of takeoff tests were proposed as footprint tests, with little or no flight test data being presented. It should be recognised, therefore, that it may be necessary for new flight test data to be gathered if the use of footprint tests becomes excessive, not just overall, but also in specific areas.
- 3.5 For recurrent evaluation purposes an essential match is to be expected. Validation tests using footprint data, which do not provide an essential match, should be justified to the satisfaction of the Authority.
- 3.6 The Authority should be consulted well in advance of the QTG submission if footprint tests are to be used.

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