

the tolerances. In these cases, the solution is to compare the results to the MQTG. The continuing qualification results are compared to the results in the MQTG for acceptance. The flight simulator operator and the NSPM should look for any change in the flight simulator performance since initial qualification.

b. Continuing Qualification Evaluation Test Results Presentation

(1) Flight simulator operators are encouraged to over-plot continuing qualification validation test results with MQTG flight simulator results recorded during the initial evaluation and as amended. Any change in a validation test will be readily apparent. In addition to plotting continuing qualification validation test and MQTG results, operators may elect to plot reference data.

(2) There are no suggested tolerances between flight simulator continuing qualification and MQTG validation test results. Investigation of any discrepancy between the MQTG and continuing qualification flight simulator performance is left to the discretion of the flight simulator operator and the NSPM.

(3) Differences between the two sets of results, other than variations attributable to repeatability issues that cannot be explained should be investigated.

(4) The flight simulator should retain the ability to over-plot both automatic and manual validation test results with reference data.

END INFORMATION

BEGIN QPS REQUIREMENTS

17. ALTERNATIVE DATA SOURCES, PROCEDURES, AND INSTRUMENTATION: LEVEL B SIMULATORS ONLY

a. Sponsors are not required to use the alternative data sources, procedures, and instrumentation. However, any sponsor choosing to use alternative sources must comply with the requirements in Table C2E.

END QPS REQUIREMENTS

BEGIN INFORMATION

b. It has become standard practice for experienced simulator manufacturers to use such techniques as a means of establishing data bases for new simulator configurations while awaiting the availability of actual flight test data. The data generated from the aerodynamic modeling techniques is then compared to the flight test data when it becomes available. The results of such comparisons have become increasingly consistent, indicating that these techniques, ap-

plied with appropriate experience, are dependable and accurate for the development of aerodynamic models for use in Level B simulators.

c. Based on this history of successful comparisons, the NSPM has concluded that those who are experienced in the development of aerodynamic models for simulator application can successfully use these modeling techniques to alter the method for acquiring flight test data for Level B simulators.

d. The information in Table C2E (Alternative Data Sources, Procedures, and Information) is presented to describe an acceptable alternative to data sources for simulator modeling and validation and an acceptable alternative to the procedures and instrumentation traditionally used to gather such modeling and validation data.

(1) Alternative data sources that may be used for part or all of a data requirement are the Helicopter Maintenance Manual, the Rotorcraft Flight Manual (RFM), Helicopter Design Data, the Type Inspection Report (TIR), Certification Data or acceptable supplemental flight test data.

(2) The sponsor should coordinate with the NSPM prior to using alternative data sources in a flight test or data gathering effort.

e. The NSPM position on the use of these alternative data sources, procedures, and instrumentation is based on the use of a rigorously defined and fully mature simulation controls system model that includes accurate gearing and cable stretch characteristics (where applicable), determined from actual aircraft measurements. The model does not require control surface position measurements in the flight test objective data in these limited applications.

f. Data may be acquired by using an inertial measurement system and a synchronized video of the calibrated helicopter instruments, including the inclinometer; the force/position measurements of flight deck controls; and a clear visual directional reference for a known magnetic bearing (e.g., a runway centerline). Ground track and wind corrected heading may be used for sideslip angle.

g. The sponsor is urged to contact the NSPM for clarification of any issue regarding helicopters with reversible control systems. This table is not applicable to Computer Controlled Aircraft flight simulators.

h. Use of these alternate data sources, procedures, and instrumentation does not relieve the sponsor from compliance with the balance of the information contained in this document relative to Level B FFSS.

i. The term "inertial measurement system" is used in table C2E includes the use of a functional global positioning system (GPS).

j. Synchronized video for the use of alternative data sources, procedures, and instrumentation should have: