

supported by aircraft data at one extreme weight or CG, another test supported by aircraft data at mid-conditions or as close as possible to the other extreme is necessary. Certain tests that are relevant only at one extreme CG or weight condition need not be repeated at the other extreme. The results of the tests for Level 6 are expected to be indicative of the device's performance and handling qualities throughout all of the following:

- (1) The helicopter weight and CG envelope.
- (2) The operational envelope.
- (3) Varying atmospheric ambient and environmental conditions—including the extremes authorized for the respective helicopter or set of helicopters.

f. When comparing the parameters listed to those of the helicopter, sufficient data must also be provided to verify the correct flight condition and helicopter configuration changes. For example, to show that control force is within the parameters for a static stability test, data to show the correct airspeed, power, thrust or torque, helicopter configuration, altitude, and other appropriate datum identification parameters must also be given. If comparing short period dynamics, normal acceleration may be used to establish a match to the helicopter, but airspeed, altitude, control input, helicopter configuration, and other appropriate data must also be given. If comparing landing gear change dynamics, pitch, airspeed, and altitude may be used to establish a match to the helicopter, but landing gear position must also be provided. All airspeed values must be properly annotated (e.g., indicated versus calibrated). In addition, the same variables must be used for comparison (e.g., compare inches to inches rather than inches to centimeters).

g. The QTG provided by the sponsor must clearly describe how the FTD will be set up and operated for each test. Each FTD subsystem may be tested independently, but overall integrated testing of the FTD must be accomplished to assure that the total FTD system meets the prescribed standards. A manual test procedure with explicit and detailed steps for completing each test must also be provided.

h. For previously qualified FTDs, the tests and tolerances of this attachment may be used in subsequent continuing qualification evaluations for any given test if the sponsor has submitted a proposed MQTG revision to the NSPM and has received NSPM approval.

i. Tests of handling qualities must include validation of augmentation devices. FTDs

for highly augmented helicopters will be validated both in the unaugmented configuration (or failure state with the maximum permitted degradation in handling qualities) and the augmented configuration. Where various levels of handling qualities result from failure states, validation of the effect of the failure is necessary. For those performance and static handling qualities tests where the primary concern is control position in the unaugmented configuration, unaugmented data are not required if the design of the system precludes any affect on control position. In those instances where the unaugmented helicopter response is divergent and non-repeatable, it may not be feasible to meet the specified tolerances. Alternative requirements for testing will be mutually agreed upon by the sponsor and the NSPM on a case-by-case basis.

j. Some tests will not be required for helicopters using helicopter hardware in the FTD flight deck (e.g., "helicopter modular controller"). These exceptions are noted in Section 2 "Handling Qualities" in Table D2A of this attachment. However, in these cases, the sponsor must provide a statement that the helicopter hardware meets the appropriate manufacturer's specifications and the sponsor must have supporting information to that fact available for NSPM review.

k. In cases where light-class helicopters are being simulated, prior coordination with the NSPM on acceptable weight ranges is required. The terms "light," "medium," and "near maximum," may not be appropriate for the simulation of light-class helicopters.

END QPS REQUIREMENTS

BEGIN INFORMATION

l. In those cases where the objective test results authorize a "snapshot test" or a "series of snapshot test" results in lieu of a time-history result, the sponsor or other data provider must ensure that a steady state condition exists at the instant of time captured by the "snapshot." The steady state condition must exist from 4 seconds prior to, through 1 second following, the instant of time captured by the snapshot.

m. Refer to AC 120-27, Aircraft Weight and Balance; and FAA-H-8083-1, Aircraft Weight and Balance Handbook, for more information.

END INFORMATION