



U.S Department  
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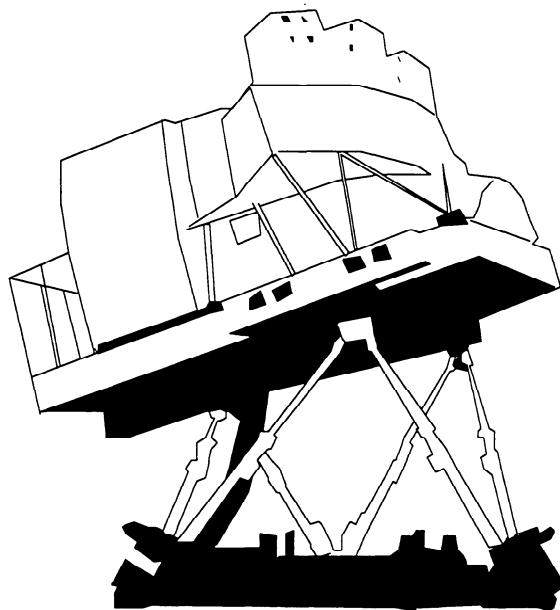
Federal Aviation  
Administration

# Advisory Circular

AC 120-63  
Date: 10/11/94

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## HELICOPTER SIMULATOR QUALIFICATION



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Initiated By: AFS-205





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Subject: **HELICOPTER SIMULATOR  
QUALIFICATION**

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**1. PURPOSE.** This advisory circular (AC) provides an acceptable means, but not the only means, for qualifying helicopter simulators to be used in training programs or for airman checking under various parts of the Federal Aviation Regulations (FAR). Criteria specified in this AC are those used by the Federal Aviation Administration (FAA) to determine whether a simulator is qualified for such training and checking and, if so, the qualification level. While these guidelines are not mandatory, they are derived from extensive FAA and industry experience in determining compliance with the pertinent FAR. Mandatory terms used in this circular such as "shall" or "must" are used to ensure compliance with the criteria set forth in the advisory circular when the acceptable method of compliance described herein is used. Applicable regulations must also be referenced to ensure compliance with the provisions therein. This AC does not change regulatory requirements or create additional ones, and does not authorize changes in, or deviations from, regulatory requirements. This AC applies only to the evaluation of helicopter simulators. Criteria for the evaluation of airplane simulators are contained in AC 120-40, as revised, "Airplane Simulator Qualification."

**2. RELATED FAR SECTIONS.** FAR Part 1 and FAR §§ 61.51, 61.55, 61.57, 61.58, 61.63, 61.65, 61.67, 61.155, 61.157, 61.161, 61.163, 135.293, 135.297, 135.323, and 135.335.

**3. RELATED READING MATERIAL.** AC 150/5300-2, as revised, "Airport Design Standards - Site Requirements for Terminal Navigational Facilities"; AC 150/5340-1, as revised, "Marking of Paved Areas on Airports"; AC 150/5340-4, as revised, "Installation Details for Runway Centerline Touchdown Zone Lighting Systems"; AC 150/5340-19, "Taxiway Centerline Lighting System"; AC 150/5340-21, "Airport Miscellaneous Lighting Visual Aids"; AC 150/5340-24, "Runway and Taxiway Edge Lighting System"; AC 150/5345-28, as revised, "Precision Approach Path Indicator (PAPI) Systems"; AC 150/5390-1, as revised, "Heliport Design Guide"; and AC 120-40, as revised, "Airplane Simulator Qualification."

**4. BACKGROUND.**

*a.* The FAA has been involved in flight simulator evaluation and approval for well over three decades. As far back as 1954, air carriers were allowed to perform limited proficiency check maneuvers in AIRPLANE simulators. Credit for the use of these devices was hampered by the state of the technology available in early simulator development. More recently, however, rapid technological advances have permitted and encouraged the expanded use of flight simulators in the training and checking of flight crewmembers. In addition, the complexity, operating costs, and operating environment of modern aircraft have lead to the increasing use of advanced simulator technology. Extensive experience has proven that modern simulators can provide more in-depth training than can be accomplished in the aircraft as well as provide a very high transfer of learning and behavior from the simulator to the aircraft. Their use, in lieu of aircraft, results in safer flight training and cost reductions for the operators, while achieving fuel conservation and a significant reduction in environmental impact.

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b. In recognition of expanding flight simulator capabilities, as technology has progressed, FAR revisions have been developed to permit the increased use of AIRPLANE simulators in approved training programs. To date, the FAR have not addressed the training and checking of flight crewmembers in helicopter simulators which, as a result, limited their use. Those helicopter simulators in use today have been evaluated and approved on a case-by-case basis. By exemption to the FAR, some persons have received credits for training and checking received in helicopter simulators. Provisions have been made in this document to permit the continued use of these existing simulators provided they continue to meet the criteria under which they were originally evaluated and approved.

c. The same factors that have led to the widespread use and acceptance of airplane simulators, such as technological advancements, aircraft complexity, operating cost, operating environment, enhanced training, safety, environmental impact, etc., have recently spurred a dramatic increase in interest in helicopter simulators. It is anticipated that the use of helicopter simulators will expand rapidly and that applicable regulations will be amended to extend formal credit to the use of helicopter simulators in approved training programs.

d. Evaluation and qualification of simulators and flight training devices are the responsibility of the FAA National Simulator Program Manager (NSPM). The NSPM is also responsible for the development of standards, guidance and policy concerning these devices.

## 5. DEFINITIONS AND APPLICATION.

a. **Helicopter Simulator** is a full size replica of a helicopter cockpit, representing a specific type or make, model, and series. It also includes the assemblage of equipment and computer programs necessary to represent the helicopter in ground and flight operations, a visual system providing a real time out-of-the-cockpit view, a control force system, and a motion system which provides cues that are at least equivalent to that of a three-degrees-of-freedom motion system; and is in compliance with the minimum standards for a Level B simulator. Appendix 1 describes the minimum requirements for Level B, Level C, and Level D helicopter simulators.

b. **Qualification Test Guide (QTG)** is a document designed to validate that the performance and handling qualities of the simulator agree within prescribed limits to those of the helicopter and that all applicable regulatory requirements have been met. The QTG includes both the helicopter and simulator data used to support the validation. The Master Qualification Test Guide (MQTG) is the FAA-approved QTG and incorporates the results of FAA witnessed tests. The MQTG serves as the reference for future evaluations.

c. **Convertible Simulator** is a simulator in which hardware and software can be changed so that the simulator becomes a replica of a different model, but usually of the same type, helicopter.

d. **Highlight Brightness** is the area of maximum displayed brightness which satisfies the brightness test in Appendix 1, Item 4.l.

e. **Latency** is the additional time beyond that of the basic helicopter perceivable response time due to the response time of the simulator. This includes the time delay effects of the computer system, control loading system, motion system, visual system, instruments, and all data communication and interface systems.

f. **National Simulator Program Manager (NSPM)** is the FAA Manager responsible for the overall administration and direction of the National Simulator Program.

g. **Operator**, as used in this AC, is the person or organization that requests FAA qualification of a simulator for use within the operator's FAA-approved training program and is responsible for continuing qualification and liaison with the FAA.

h. **Simulation Data** are the various types of data used by the simulator manufacturer and the applicant to design, manufacture, and test the flight simulator.

i. **Simulator Evaluation Specialist** is an FAA technical specialist trained to evaluate simulators and to provide expertise on matters concerning simulation.

j. **Snapshot** is a presentation of one or more variables at a given instant of time. A snapshot is appropriate for a steady state condition in which the variables are constant with time.

k. **Statement of Compliance (SOC)** is a certification from the operator that specific requirements have been met. The SOC incorporates references to needed sources of information for showing compliance, rationale to explain how the referenced material is used, mathematical equations and parameter values used, and conclusions reached.

l. **Time History** is a presentation of the change of a variable with respect to time. (It is usually in the form of a continuous data plot over the time period of interest or a printout of test parameter values recorded at multiple constant time intervals over the time period of interest.)

m. **Transport Delay** is the total simulator system processing time required from a pilot primary flight control input signal until a motion system, visual system, and instrument response. It is the overall time delay incurred from signal input until output response. It does not include the aircraft dynamic response of the helicopter simulated.

n. **Upgrade**, for the purpose of this AC, means the improvement or enhancement of a simulator for the purpose of achieving a higher level qualification.

o. **Validation Flight Test Data**, for the purpose of this AC, are the flight and ground handling, performance, stability and control, propulsion, and other necessary test parameters electronically recorded in a helicopter using a calibrated data acquisition system verified as accurate by the company performing the test.

p. **Visual System Response Time** is the interval from an abrupt control input to the completion of the visual display scan of the first video field containing the resulting different information.

## 6. DISCUSSION.

a. The procedures and criteria for simulator evaluation and qualification under the National Simulator Program are contained in this AC. There are currently three levels of complexity of helicopter simulators, levels B, C, and D, which are comparable in complexity and intended use to airplane simulators of the same level. Level A is reserved for potential future use. A simulator, qualified by the NSPM in accordance with the guidance and standards herein, will be recommended for approval to the operator's principal operations inspector (POI) or certificate holding district office, as applicable for use within the operator's training program.

b. Evaluation of simulators used for training or certification of airmen under Title 14 CFR fall under the direction of the National Simulator Program. A simulator will be evaluated under the provisions of this AC if it is used in a training program approved for the sponsoring operator under FAR Part 121 or 135 or if it is used as part of the FAA-approved training program by the operator in the course of conducting the Pilot-in-Command Proficiency Check required by FAR § 61.58, the issuance of an airline transport pilot (ATP) certificate or type rating in accordance with the provisions of FAR § 61.163, or the issuance of a type rating in accordance with the provisions of FAR § 61.63.

c. Under the National Simulator Program concept, the simulator is evaluated for a specific operator by an FAA Simulator Evaluation Specialist. Based on a successful evaluation, the NSPM will certify that the simulator meets the criteria of a specific level of qualification. Upon qualification by the NSPM, approval for use of the simulator in the operator's approved training program will be determined by the POI in the case of FAR Part 121, 127, 133, or 135 certificate holders or by the district office responsible for oversight of a training center when the training center is using the simulator to conduct checks required by FAR Part 61 as part of its approved training program.

d. FAA evaluation of a simulator located outside the United States will be performed if the simulator is being used by the U.S. operator to train or certificate U.S. airmen. Evaluations may be conducted otherwise as deemed appropriate by the Administrator on a case-by-case basis.

e. Operators who contract to use simulators already qualified and approved for the sponsoring operator at a particular level for a helicopter type are not subject to the qualification process. However, they are required to obtain FAA approval to use the simulator in their approved training programs.

## 7. EVALUATION POLICY.

a. The methods, procedures, and standards defined in this AC provide one means, acceptable to the Administrator, to evaluate and qualify a simulator. If an applicant chooses to utilize the approach described in this AC, he must adhere to all of the methods, procedures, and standards herein. However, this is not to imply that the NSPM may not apply sound engineering and/or operational judgment in the review or acceptance of data, data presentations, or other material or elements and have the application remain within the applicability of this particular method of compliance. Should an applicant desire to use another means, a proposal must be submitted to the NSPM for review and approval prior to the submittal of a detailed QTG. During the development of this AC, frequency response methods were discussed, but were not selected as the primary means of simulator validation. The FAA is, however, receptive to proposals using frequency response data as an alternative means of validation.

b. The simulator is evaluated in those areas that are essential to completing the airman training and checking process as required by regulation and by the sponsoring operator's approved training program. This may include the following: aerodynamic responses; performance in hover, takeoff, climb, cruise, descent, autorotation, approach, and landing; flight control checks; cockpit functions checks; and additional requirements depending upon the complexity or qualification level of the simulator. The motion system, instructor station functions, and visual system will also be evaluated to ensure their proper operation.

c. The intent is to evaluate the simulator as objectively as possible. Pilot acceptance, however, is also an important consideration. Therefore, the simulator will be subjected to validation tests presented in Appendix 2 of this AC, and to the functions and subjective tests presented in Appendix 3. These tests include a qualitative assessment of the simulator by an FAA pilot who is qualified in the respective helicopter. Validation tests are used to compare simulator and helicopter data objectively to ensure that they agree within specified tolerances. Functions tests are designed to provide a basis for evaluating simulator capability to perform over a typical training period and to verify correct operation of the simulator controls, instruments, and systems.

d. Tolerances, listed for parameters in Appendix 2, should not be confused with design tolerances specified for simulator manufacture. Tolerances for the parameters listed in Appendix 2 are the maximum acceptable to the Administrator for simulator validation.

e. A convertible simulator will be addressed as a separate simulator for each model and series to which it will be converted and for which FAA qualification will be sought. An FAA evaluation is required for each configuration. For example, if an operator seeks qualification for two models of a helicopter type using a convertible simulator, two QTG's or a supplemented QTG and two evaluations are required.

### f. Initial qualification.

(1) Only the aircraft manufacturer's flight test data will be accepted for initial simulator qualification under the following circumstances:

- (a) When an original type certificate was issued after June 1980.
- (b) When significant amendments are made to an original type certificate.
- (c) When a supplemental type certificate would change the handling qualities or performance.

(2) Exceptions to this policy must be submitted to the NSPM for review and consideration. It is the intent of the FAA that all tests listed in this AC be applied to simulator qualification.

(3) The NSPM will consider the use of alternative data from the helicopter manufacturer for helicopters which were type certificated before the issuance of this AC. For older helicopters, additional flight testing may be necessary.

(4) For a new type or model of helicopter, predicted data validated by the manufacturer's preliminary flight test data may be used for an interim period as determined by the FAA. In the event predicted data is used in programming the simulator, it should be updated as soon as practicable when actual helicopter flight test data becomes available. Unless specific conditions warrant otherwise, this update should be accomplished within six months after release of the final flight test data package by the helicopter manufacturer.

g. If a problem with a validation test result is detected by the FAA Simulator Evaluation Specialist, the test may be repeated. If it still does not meet the test criteria, the operator may demonstrate alternative test results which relate to the test in question. In the event a validation test(s) does not meet specified criteria, but the criteria are not considered critical to the level of evaluation being conducted, the NSPM may conditionally qualify the simulator at that level. The operator will be given a specified period of time to correct the problem and submit the QTG changes to the NSPM for evaluation. Alternatively, if it is determined that the results of a validation test would have a detrimental effect on the level of qualification being sought or if the test outcome is a firm regulatory requirement, the NSPM may qualify the simulator to a lesser level or restrict maneuvers based upon the evaluation completed. For example, if a Level D evaluation is requested and the simulator fails to meet hover test criteria, it could be qualified at Level B.

h. Evaluation dates will not be established until the QTG has been reviewed by the NSPM and determined to be acceptable. Within 10 working days of receiving an acceptable QTG, the NSPM will coordinate with the operator and POI to set a mutually acceptable date for the evaluation. To avoid unnecessary delays, the operator is encouraged to work closely with the NSPM during the QTG development process prior to making formal application.

i. At the discretion of the FAA Simulator Evaluation Specialist, the operator's pilots may assist in completing the functions and validation tests during evaluations. However, only FAA personnel should manipulate the pilot controls during the functions check portion of an FAA evaluation.

## **8. INITIAL OR UPGRADE EVALUATION AND QUALIFICATION.**

a. The operator seeking simulator initial or upgrade evaluation and qualification pursuant to this AC must submit a request in writing to the NSPM through the POI or the responsible FAA Flight Standards District Office (FSDO). This request must contain an SOC certifying that the simulator meets all of the provisions of this AC. This shall include a certification that the cockpit configuration of the simulator conforms to that of the helicopter; the specific hardware and software configuration control procedures have been established; and that the simulator is representative of the helicopter in all functional test areas, as confirmed by the operator's designated pilots. A sample letter of request is included in Appendix 4.

b. The operator shall submit a QTG which includes the following:

- (1) A title page with the operator and FAA approval signature blocks.
- (2) A simulator information page, for each configuration in the case of convertible simulators, providing the following:
  - (a) Operator's simulator identification number or code.
  - (b) Helicopter model and series being simulated.
  - (c) Aerodynamic model and data revisions (as applicable).

- (d) Engine model and its data revision.
  - (e) Flight control model and data revisions (as applicable).
  - (f) Flight Management System identification and revision level.
  - (g) Simulator model and manufacturer.
  - (h) Date of simulator manufacture.
  - (i) Simulator computer identification.
  - (j) Visual system model and manufacturer.
  - (k) Motion system type and manufacturer.
- (3) Table of contents.
  - (4) Log of revision and/or list of effective pages.
  - (5) Listing of all reference source data.
  - (6) Glossary of terms and symbols used.
- (7) SOC's that shall provide references that include sources of information for showing compliance; rationale to explain how the referenced material is used; mathematical equations and parameter values used; and conclusions reached. Refer to Appendix 1, "Simulator Standards," comments column, for SOC requirements.
  - (8) Recording procedures or a list of equipment required or the validation tests.
  - (9) The following for each validation test designated in Appendix 2 of this AC:
    - (a) Name of the test.
    - (b) Objective of the test.
    - (c) Initial conditions.
    - (d) Manual test procedures.
    - (e) Automatic test procedures (if applicable).
    - (f) Method for evaluating simulator validation test results.
    - (g) Tolerances for relevant parameters.
    - (h) Source of Helicopter Test Data (document and page number).
    - (i) Copy of Helicopter Test Data.
    - (j) Simulator Validation Test Results, as obtained by the operator.
    - (k) A means, acceptable to the NSPM, of easily comparing the simulator test results to Helicopter Test Data.
- c. The operator's simulator validation test results must be recorded on a multichannel recorder, line printer, or other appropriate recording media acceptable to the NSPM. Simulator results shall be labeled using terminology common to helicopter parameters instead of computer software identifications. These results shall be easily compared to the supporting data by employing cross plotting, overlays, transparencies, overplotting of manufacturer data, or other acceptable means. Helicopter data documents included in a QTG may be photographically reduced only if such reduction will not alter the graphic scaling or cause difficulties in scale interpretation or resolution. Incremental scales on graphical presentations must provide the resolution necessary for evaluation of the parameters shown in Appendix 2. The test guide will provide the documented

proof of compliance with the simulator validation tests in Appendix 2. In the case of a simulator upgrade, the operator must run all validation tests needed for the requested qualification level. Validation test results offered in a test guide for a previous initial or upgrade evaluation should not be offered to validate the simulator performance in a test guide offered for a current upgrade. For tests involving time histories, the flight test data sheets or transparencies thereof and the results of the simulator tests shall be marked clearly with the appropriate reference points to ensure an accurate comparison between simulator and helicopter data with respect to time. Operators using line printers to record time histories shall clearly mark that information taken from the line printer data output for cross-plotting on the helicopter data. The cross-plotting of the operator's simulator data to helicopter data is essential to verify simulator performance in each test. During an evaluation, the FAA will perform a detailed check of selected tests from the QTG. The FAA evaluation serves to validate the operator's simulator test results.

*d.* The completed QTG and the operator's compliance letter and request for the evaluation shall be submitted through the operator's POI. The POI will then submit the total package with a letter or memorandum of endorsement to the NSPM. The QTG will be reviewed and determined to be acceptable prior to scheduling an evaluation of the simulator.

*e.* A copy of a QTG for each type simulator by each simulator manufacturer will be required for the NSPM's file. The NSPM may elect not to retain copies of the QTG for subsequent simulators of the same type by a particular manufacturer, but will determine the need for copies on a case-by-case basis. Data updates to an original QTG shall be provided to the NSPM in order to keep FAA file copies current.

*f.* The operator may elect to accomplish the QTG validation tests while the simulator is at the manufacturer's facility. Tests at the manufacturer's facility should be accomplished at the latest practical time prior to disassembly and shipment. The operator must then validate simulator performance at the final location by repeating at least 1/2 of the validation tests in the QTG and submitting those tests to the NSPM. After review of these tests, the FAA will schedule an initial evaluation. The QTG must be clearly annotated to indicate when and where each test was accomplished.

*g.* In the event an operator moves a simulator to a new location and its level of qualification is not changed, the following procedures shall apply:

(1) The operator should advise the POI and NSPM of the move.

(2) Before returning the simulator to service at the new location, the operator shall perform a typical recurrent validation and functions test. The results of such tests will be retained by the operator and be available for inspection by the FAA at the next evaluation or as requested.

(3) The NSPM may schedule an evaluation prior to return to service.

*h.* When there is a change of operator, the new operator must accomplish all required administrative procedures including the submission of the currently approved MQT Guide (MQTG) through the POI to the NSPM. The QTG must be identified with the new operator by displaying the operator's name or logo. The POI will then submit the package as described in paragraph 9.d. The simulator may, at the discretion of the NSPM, be subject to an evaluation in accordance with the original qualification criteria.

*i.* The scheduling priority for initial and upgrade evaluations will be based on the sequence in which acceptable QTG's and evaluation requests are received by the NSPM.

*j.* The QTG will be approved after the completion of the initial or upgrade evaluation and after all discrepancies in the QTG have been corrected. This document, after inclusion of the FAA witnessed test results, becomes the MQTG. The MQTG will then remain in the custody of the operator for use in future recurrent evaluations.

## 9. RECURRENT EVALUATIONS.

a. For a simulator to retain its qualification pursuant to this AC, it will be evaluated on a recurrent basis using the approved MQTG. Unless otherwise determined by the NSPM, recurring evaluations will be accomplished every 6 months by a Simulator Evaluation Specialist. Each recurrent evaluation, normally scheduled for 8 hours of simulator time, will consist of functions tests and approximately 1/2 of the validation tests in the MQTG. The entire MQTG will, therefore, be completed on an annual basis.

b. Normally, dates of recurrent evaluations will not be scheduled beyond 30 days of the date due. Exceptions to this policy will be considered by the NSPM on a case-by-case basis to address extenuating circumstances.

c. In the interest of conserving simulator time, the following Optional Test Program (OTP) is an alternative to the 8-hour recurrent evaluation procedure:

(1) The operator of a simulator having the appropriate automatic recording and plotting capabilities may apply for evaluation of that simulator under the OTP.

(2) The operator must notify the NSPM in writing of its intent to enter the OTP. If the FAA determines that the evaluation can be accommodated with 4 hours or less of simulator time, recurrent evaluations for that simulator will be planned for 4 hours. If the 4-hour period is or will be exceeded and the operator cannot extend the period, then the evaluation will be terminated and must be completed within 30 days to maintain qualification status. The FAA will then reassess the appropriateness of the OTP.

(3) Under the OTP, at least 1/2 of all the validation tests will be performed and certified by the operator between FAA recurrent evaluations. Completion of all validation tests will be required through any two consecutive recurrent evaluations. This information will be reviewed by the FAA Simulator Evaluation Specialist at the outset of each evaluation. These tests should be accomplished within the 30 days prior to the scheduled evaluation or accomplished on an evenly distributed basis during the 6-month period preceding the scheduled evaluation. Twenty percent of those tests performed by the operator for each recurrent evaluation will then be selected and repeated by the Simulator Evaluation Specialist along with 10 percent of those tests not performed by the operator.

d. Prior to arrival for an on-site evaluation, the FAA inspector will notify the operator if any tests are planned to be run that may require special equipment or technicians. These tests would include latencies, control dynamics, sounds and vibrations, or motion system tests.

e. If the operator plans to remove a simulator from active status for a prolonged period, the following procedures shall apply to requalify the simulator pursuant to this AC:

(1) The NSPM and POI shall be advised in writing. The notice shall contain an estimate of the period in which the simulator will be inactive.

(2) Recurrent evaluations will not be scheduled during the inactive period. The NSPM will remove the simulator from qualified status on a mutually established date no later than the date on which the next recurrent evaluation would have been scheduled.

(3) Before a simulator can be restored to FAA qualified status, it will require an evaluation by the NSPM. The evaluation content and time required for accomplishment will be based on the number of recurrent evaluations missed during the inactive period. For example, if the simulator were out of service for 1 year, it would be necessary to complete all tests contained in the test guide since, under the recurrent evaluation program, all validation tests in the MQTG are to be completed annually.

(4) The operator shall notify the NSPM of any changes to the originally scheduled time out of service.

(5) Normally, the simulator will be requalified using the FAA-approved MQTG and criteria that were in effect prior to its removal from qualification. Inactive periods exceeding 1 year or failure to adhere to the preceding procedures will require a review of the qualification basis.

f. In general, convertible simulators will be evaluated in alternating model configurations so that only one model configuration is evaluated during any one recurrent evaluation. This policy is dependent upon a high degree of commonality between model configurations and is subject to review by the NSPM on a case-by-case basis.

## 10. SPECIAL EVALUATIONS.

a. Between recurring evaluations, if deficiencies are discovered or it becomes apparent that the simulator is not being maintained to initial qualification standards, a special evaluation of the simulator may be conducted by the NSPM to verify its status.

b. The POI shall advise the operator and the NSPM if a deficiency is jeopardizing training requirements. Arrangements shall then be made to resolve the deficiency in the most effective manner, which may include the withdrawal of approval by the POI.

## 11. MODIFICATION OF SIMULATORS, MOTION SYSTEMS, AND VISUAL SYSTEMS.

a. The operator must notify the POI and NSPM at least 21 calendar days prior to making software program or hardware changes which might impact flight or ground dynamics of the simulator. A complete list and description of these planned changes, including dynamics related to the motion and visual systems, must be provided in writing. Any necessary updates to the MQTG shall also be identified. Operators should maintain a configuration control system to ensure the continued integrity of the simulator as qualified and to account for changes incorporated. The configuration control system may be examined by the FAA on request.

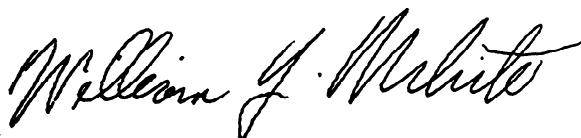
b. Modifications which impact flight or ground dynamics, systems functions, and significant QTG revisions may require an FAA evaluation of the simulator.

**12. SIMULATOR QUALIFICATION BASIS.** The FAR require that the simulator must maintain its approved performance, functions, and other characteristics. All initial, upgrade, and recurrent evaluations of any simulator qualified according to the acceptable methods of compliance described herein will be conducted in accordance with the provisions of this AC. Those simulators approved prior to this AC will continue to maintain their current qualification as long as they meet the standards under which they were originally approved, regardless of operator. Any simulator upgraded to Level C or Level D standards, or any visual system or motion system upgrade, requires an initial evaluation of that simulator, visual system, or motion system in accordance with the provisions herein.

## 13. LOSS OF QUALIFICATION/WITHDRAWAL OF APPROVAL.

a. The simulator will lose its qualification under this AC if the NSPM determines that it no longer meets the original simulator validation criteria based on a recurrent or special evaluation.

b. While not a loss of qualification, the POI may withdraw approval for the use of the simulator in the approved training program, pursuant to this AC, when a deficiency is jeopardizing training requirements. The POI will advise the NSPM that this action has been taken, and together they shall determine if further evaluation by the NSPM is required.



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