

Attachment 4 to Appendix D to Part 60—
Figure D4I – Sample MQTG Index of Effective FTD Directives
INFORMATION

Index of Effective FSTD Directives Filed in this Section			
Number	Effective Date	Date of Notification	Details

Continue as Necessary....

[Doc. No. FAA-2002-12461, 73 FR 26490, May 9, 2008]

**APPENDIX E TO PART 60—QUALIFICATION
PERFORMANCE STANDARDS FOR
QUALITY MANAGEMENT SYSTEMS FOR
FLIGHT SIMULATION TRAINING DE-
VICES**

BEGIN QPS REQUIREMENTS

a. Not later than May 30, 2010, each current sponsor of an FSTD must submit to the NSPM a proposed Quality Management System (QMS) program as described in this appendix. The NSPM will notify the sponsor of the acceptability of the program, including any required adjustments. Within 6 months of the notification of acceptability, the sponsor must implement the program, conduct internal audits, make required program adjustments as a result of any internal audit, and schedule the NSPM initial audit.

b. First-time FSTD sponsors must submit to the NSPM the proposed QMS program no later than 120 days before the initial FSTD evaluation. The NSPM will notify the sponsor of the acceptability of the program, including any required adjustments. Within 6 months of the notification of acceptability, the sponsor must implement the program,

conduct internal audits, make required program adjustments as a result of any internal audit, and schedule the NSPM initial audit.

c. The Director of Operations for a Part 119 certificate holder, the Chief Instructor for a Part 141 certificate holder, or the equivalent for a Part 142 or Flight Engineer School sponsor must designate a Management Representative (MR) who has the authority to establish and modify the sponsor's policies, practices, and procedures regarding the QMS program for the recurring qualification and the daily use of each FSTD.

d. The minimum content required for an acceptable QMS is found in Table E1. The policies, processes, or procedures described in this table must be maintained in a Quality Manual and will serve as the basis for the following:

- (1) The sponsor-conducted initial and recurring periodic assessments;
- (2) The NSPM-conducted initial and recurring periodic assessments; and
- (3) The continuing surveillance and analysis by the NSPM of the sponsor's performance and effectiveness in providing a satisfactory FSTD for use on a regular basis.

e. The sponsor must conduct assessments of its QMS program in segments. The segments will be established by the NSPM at the initial assessment, and the interval for the segment assessments will be every 6

months. The intervals for the segment assessments may be extended beyond 6 months as the QMS program matures, but will not be extended beyond 12 months. The entire QMS program must be assessed every 24 months.

f. The periodic assessments conducted by the NSPM will be conducted at intervals not less than once every 24 months, and include a comprehensive review of the QMS program. These reviews will be conducted more frequently if warranted.

END QPS REQUIREMENTS

BEGIN INFORMATION

g. An example of a segment assessment—At the initial QMS assessment, the NSPM will divide the QMS program into segments (e.g., 6 separate segments). There must be an assessment of a certain number of segments every 6 months (i.e., segments 1 and 2 at the end of the first 6 month period; segments 3 and 4 at the end of the second 6 month period (or one year); and segments 5 and 6 at the end of the third 6 month period (or 18 months). As the program matures, the interval between assessments may be extended to 12 months (e.g., segments 1, 2, and 3 at the end of the first year; and segments 4, 5, and 6 at the end of the second year). In both cases, the entire QMS program is assessed at least every 24 months.

h. The following materials are presented to assist sponsors in preparing for an NSPM evaluation of the QMS program. The sample documents include:

(1) The NSPM desk assessment tool for initial evaluation of the required elements of a QMS program.

(2) The NSPM on-site assessment tool for initial and continuing evaluation of the required elements of a QMS program.

(3) An Element Assessment Table that describes the circumstances that exist to warrant a finding of “non-compliance,” or “non-conformity”; “partial compliance,” or “partial conformity”; and “acceptable compliance,” or “acceptable conformity.”

(4) A sample Continuation Sheet for additional comments that may be added by the sponsor or the NSPM during a QMS evaluation.

(5) A sample Sponsor Checklist to assist the sponsor in verifying the elements that comprise the required QMS program.

(6) A table showing the essential functions, processes, and procedures that relate to the required QMS components and a cross-reference to each represented task.

i. Additional Information.

(1) In addition to specifically designated QMS evaluations, the NSPM will evaluate the sponsor’s QMS program as part of regularly scheduled FSTD continuing qualification evaluations and no-notice FSTD evalua-

tions, focusing in part on the effectiveness and viability of the QMS program and its contribution to the overall capability of the FSTD to meet the requirements of this part.

(2) The sponsor or MR may delegate duties associated with maintaining the qualification of the FSTD (e.g., corrective and preventive maintenance, scheduling and conducting tests or inspections, functional pre-flight checks) but retain the responsibility and authority for the day-to-day qualification of the FSTD. One person may serve as the sponsor or MR for more than one FSTD, but one FSTD may not have more than one sponsor or MR.

(3) A QMS program may be applicable to more than one certificate holder (e.g., part 119 and part 142 or two part 119 certificate holders) and an MR may work for more than one certificate holder (e.g., part 119 and part 142 or two part 119 certificate holders) as long as the sponsor’s QMS program requirements and the MR requirements are met for each certificate holder.

(4) Standard Measurements for Flight Simulator Quality: A quality system based on FSTD performance will improve and maintain training quality. See http://www.faa.gov/safety/programs_initiatives/aircraft_aviation/nsp/sqms/ for more information on measuring FSTD performance.

j. The FAA does not mandate a specific QMS program format, but an acceptable QMS program should contain the following:

(1) A Quality Policy. This is a formal written Quality Policy Statement that is a commitment by the sponsor outlining what the Quality System will achieve.

(2) A MR who has overall authority for monitoring the on-going qualification of assigned FSTDs to ensure that all FSTD qualification issues are resolved as required by this part. The MR should ensure that the QMS program is properly implemented and maintained, and should:

(a) Brief the sponsor’s management on the qualification processes;

(b) Serve as the primary contact point for all matters between the sponsor and the NSPM regarding the qualification of the assigned FSTDs; and

(c) Oversee the day-to-day quality control.

(3) The system and processes outlined in the QMS should enable the sponsor to monitor compliance with all applicable regulations and ensure correct maintenance and performance of the FSTD in accordance with part 60.

(4) A QMS program and a statement acknowledging completion of a periodic review by the MR should include the following:

(a) A maintenance facility that provides suitable FSTD hardware and software tests and maintenance capability.

(b) A recording system in the form of a technical log in which defects, deferred defects, and development projects are listed,

assigned and reviewed within a specified time period.

(c) Routine maintenance of the FSTD and performance of the QTG tests with adequate staffing to cover FSTD operating periods.

(d) A planned internal assessment schedule and a periodic review should be used to verify that corrective action was complete and effective. The assessor should have ade-

quate knowledge of FSTDs and should be acceptable to the NSPM.

(5) The MR should receive Quality System training and brief other personnel on the procedures.

END INFORMATION

TABLE E1—FSTD QUALITY MANAGEMENT SYSTEM

Entry No.	QPS requirement	Information (reference)
E1.1.	A QMS manual that prescribes the policies, processes, or procedures outlined in this table.	§ 60.5(a).
E1.2.	A policy, process, or procedure specifying how the sponsor will identify deficiencies in the QMS.	§ 60.5(b).
E1.3.	A policy, process, or procedure specifying how the sponsor will document how the QMS program will be changed to address deficiencies.	§ 60.5(b).
E1.4.	A policy, process, or procedure specifying how the sponsor will address proposed program changes (for programs that do not meet the minimum requirements as notified by the NSPM) to the NSPM and receive approval prior to their implementation.	§ 60.5(c).
E1.5.	A policy, process, or procedure specifying how the sponsor will document that at least one FSTD is used within the sponsor's FAA-approved flight training program for the aircraft or set of aircraft at least once within the 12-month period following the initial or upgrade evaluation conducted by the NSPM and at least once within each subsequent 12-month period thereafter.	§ 60.7(b)(5).
E1.6.	A policy, process, or procedure specifying how the sponsor will document that at least one FSTD is used within the sponsor's FAA-approved flight training program for the aircraft or set of aircraft at least once within the 12-month period following the first continuing qualification evaluation conducted by the NSP and at least once within each subsequent 12-month period thereafter.	§ 60.7(b)(6).
E1.7.	A policy, process, or procedure specifying how the sponsor will obtain an annual written statement from a qualified pilot (who has flown the subject aircraft or set of aircraft during the preceding 12-month period) that the performance and handling qualities of the subject FSTD represents the subject aircraft or set of aircraft (within the normal operating envelope). Required only if the subject FSTD is not used in the sponsor's FAA-approved flight training program for the aircraft or set of aircraft at least once within the preceding 12-month period.	§ 60.5(b)(7) and § 60.7(d)(2).
E1.8.	A policy, process, or procedure specifying how independent feedback (from persons recently completing training, evaluation, or obtaining flight experience; instructors and check airmen using the FSTD for training, evaluation, or flight experience sessions; and FSTD technicians and maintenance personnel) will be received and addressed by the sponsor regarding the FSTD and its operation.	§ 60.9(b)(1).
E1.9.	A policy, process, or procedure specifying how and where the FSTD SOQ will be posted, or accessed by an appropriate terminal or display, in or adjacent to the FSTD.	§ 60.9(b)(2).
E1.10.	A policy, process, or procedure specifying how the sponsor's management representative (MR) is selected and identified by name to the NSPM.	§ 60.9(c) and Appendix E, paragraph (d).
E1.11.	A policy, process, or procedure specifying the MR authority and responsibility for the following:	§ 60.9(c)(2), (3), and (4).
E1.11.a.	Monitoring the on-going qualification of assigned FSTDs to ensure all matters regarding FSTD qualification are completed as required by this part.	
E1.11.b.	Ensuring that the QMS is properly maintained by overseeing the QMS policies, practices, or procedures and modifying as necessary.	

TABLE E1—FSTD QUALITY MANAGEMENT SYSTEM—Continued

Entry No.	QPS requirement	Information (reference)
E1.11.c.	Regularly briefing sponsor's management on the status of the on-going FSTD qualification program and the effectiveness and efficiency of the QMS.	
E1.11.d.	Serving as the primary contact point for all matters between the sponsor and the NSPM regarding the qualification of assigned FSTDs.	
E1.11.e.	Delegating the MR assigned duties to an individual at each of the sponsor's locations, as appropriate.	
E1.12.	A policy, process, or procedure specifying how the sponsor will:	§ 60.13; QPS Appendices A, B, C, and D.
E1.12.a.	Ensure that the data made available to the NSPM (the validation data package) includes the aircraft manufacturer's flight test data (or other data approved by the NSPM) and all relevant data developed after the type certificate was issued (e.g., data developed in response to an airworthiness directive) if the data results from a change in performance, handling qualities, functions, or other characteristics of the aircraft that must be considered for flight crewmember training, evaluation, or experience requirements.	
E1.12.b.	Notify the NSPM within 10 working days of becoming aware that an addition to or a revision of the flight related data or airplane systems related data is available if this data is used to program or operate a qualified FSTD.	
E1.12.c.	Maintain a liaison with the manufacturer of the aircraft being simulated (or with the holder of the aircraft type certificate for the aircraft being simulated if the manufacturer is no longer in business), and if appropriate, with the person who supplied the aircraft data package for the FFS for the purposes of receiving notification of data package changes.	
E1.13.	A policy, process, or procedure specifying how the sponsor will make available all special equipment and qualified personnel needed to conduct tests during initial, continuing qualification, or special evaluations.	§ 60.14.
E1.14.	A policy, process, or procedure specifying how the sponsor will submit to the NSPM a request to evaluate the FSTD for initial qualification at a specific level and simultaneously request the TPAA forward a concurring letter to the NSPM; including how the MR will use qualified personnel to confirm the following:	§ 60.15(a)–(d); § 60.15(b); § 60.15(b)(i); § 60.15(b)(ii); § 60.15(b)(iii).
E1.14.a.	That the performance and handling qualities of the FSTD represent those of the aircraft or set of aircraft within the normal operating envelope.	
E1.14.b.	The FSTD systems and sub-systems (including the simulated aircraft systems) functionally represent those in the aircraft or set of aircraft.	
E1.14.c.	The flight deck represents the configuration of the specific type or aircraft make, model, and series aircraft being simulated, as appropriate.	
E1.15.	A policy, process, or procedure specifying how the subjective and objective tests are completed at the sponsor's training facility for an initial evaluation.	§ 60.15(e).
E1.16.	A policy, process, or procedure specifying how the sponsor will update the QTG with the results of the FAA-witnessed tests and demonstrations together with the results of the objective tests and demonstrations after the NSPM completes the evaluation for initial qualification.	§ 60.15(h).
E1.17.	A policy, process, or procedure specifying how the sponsor will make the MQTG available to the NSPM upon request.	§ 60.15(i).
E1.18.	A policy, process, or procedure specifying how the sponsor will apply to the NSPM for additional qualification(s) to the SOQ.	§ 60.16(a); § 60.16(a)(1)(i); and § 60.16(a)(1)(ii).
E1.19.	A policy, process, or procedure specifying how the sponsor completes all required Attachment 2 objective tests each year in a minimum of four evenly spaced inspections as specified in the appropriate QPS.	§ 60.19(a)(1) QPS Appendices A, B, C, or D.
E1.20.	A policy, process, or procedure specifying how the sponsor completes and records a functional preflight check of the FSTD within the preceding 24 hours of FSTD use, including a description of the functional preflight.	§ 60.19(a)(2) QPS Appendices A, B, C, or D.

TABLE E1—FSTD QUALITY MANAGEMENT SYSTEM—Continued

Entry No.	QPS requirement	Information (reference)
E1.21.	A policy, process, or procedure specifying how the sponsor schedules continuing qualification evaluations with the NSPM.	§ 60.19(b)(2).
E1.22.	A policy, process, or procedure specifying how the sponsor ensures that the FSTD has received a continuing qualification evaluation at the interval described in the MQTG.	§ 60.19(b)(5)–(6).
E1.23.	A policy, process, or procedure describing how discrepancies are recorded in the FSTD discrepancy log, including:	§ 60.19(c); § 60.19(c)(2)(i); § 60.19(c)(2)(ii).
E1.23.a.	A description of how the discrepancies are entered and maintained in the log until corrected.	
E1.23.b.	A description of the corrective action taken for each discrepancy, the identity of the individual taking the action, and the date that action is taken.	
E1.24.	A policy, process, or procedure specifying how the discrepancy log is kept in a form and manner acceptable to the Administrator and kept in or adjacent to the FSTD. (An electronic log that may be accessed by an appropriate terminal or display in or adjacent to the FSTD is satisfactory.).	§ 60.19(c)(2)(iii).
E1.25.	A policy, process, or procedure that requires each instructor, check airman, or representative of the Administrator conducting training, evaluation, or flight experience, and each person conducting the preflight inspection, who discovers a discrepancy, including any missing, malfunctioning, or inoperative components in the FSTD, to write or cause to be written a description of that discrepancy into the discrepancy log at the end of the FSTD preflight or FSTD use session.	§ 60.20.
E1.26.	A policy, process, or procedure specifying how the sponsor will apply for initial qualification based on the final aircraft data package approved by the aircraft manufacturer if operating an FSTD based on an interim qualification.	§ 60.21(c).
E1.27.	A policy, process, or procedure specifying how the sponsor determines whether an FSTD change qualifies as a modification as defined in § 60.23.	§ 60.23(a)(1)–(2).
E1.28.	A policy, process, or procedure specifying how the sponsor will ensure the FSTD is modified in accordance with any FSTD Directive regardless of the original qualification basis.	§ 60.23(b).
E1.29.	A policy, process, or procedure specifying how the sponsor will notify the NSPM and TPAA of their intent to use a modified FSTD and to ensure that the modified FSTD will not be used prior to:	§ 60.23(c)(1)(i), (ii), and (iv).
E1.29.a.	Twenty-one days since the sponsor notified the NSPM and the TPAA of the proposed modification and the sponsor has not received any response from either the NSPM or the TPAA; or	
E1.29.b.	Twenty-one days since the sponsor notified the NSPM and the TPAA of the proposed modification and one has approved the proposed modification and the other has not responded; or	
E1.29.c.	The FSTD successfully completing any evaluation the NSPM may require in accordance with the standards for an evaluation for initial qualification or any part thereof before the modified FSTD is placed in service.	
E1.30.	A policy, process, or procedure specifying how, after an FSTD modification is approved by the NSPM, the sponsor will:	§ 60.23(d)–(e).
E1.30.a.	Post an addendum to the SOQ until as the NSPM issues a permanent, updated SOQ.	
E1.30.b.	Update the MQTG with current objective test results and appropriate objective data for each affected objective test or other MQTG section affected by the modification.	
E1.30.c.	File in the MQTG the requirement from the NSPM to make the modification and the record of the modification completion.	

TABLE E1—FSTD QUALITY MANAGEMENT SYSTEM—Continued

Entry No.	QPS requirement	Information (reference)
E1.31.	A policy, process, or procedure specifying how the sponsor will track the length of time a component has been missing, malfunctioning, or inoperative (MMI), including:	§ 60.25(b)–(c), and QPS Appendices A, B, C, or D.
E1.31.a.	How the sponsor will post a list of MMI components in or adjacent to the FSTD.	
E1.31.b.	How the sponsor will notify the NSPM if the MMI has not been repaired or replaced within 30 days.*	
E1.32.	A policy, process, or procedure specifying how the sponsor will notify the NSPM and how the sponsor will seek requalification of the FSTD if the FSTD is moved and reinstalled in a different location.	§ 60.27(a)(3).
E1.33.	A policy, process, or procedure specifying how the sponsor will maintain control of the following: (The sponsor must specify how these records are maintained in plain language form or in coded form; but if the coded form is used, the sponsor must specify how the preservation and retrieval of information will be conducted.)	§ 60.31.
E1.33.a.	The MQTG and each amendment.	
E1.33.b.	A record of all FSTD modifications required by this part since the issuance of the original SOQ.	
E1.33.c.	Results of the qualification evaluations (initial and each upgrade) since the issuance of the original SOQ.	
E1.33.d.	Results of the objective tests conducted in accordance with this part for a period of 2 years.	
E1.33.e.	Results of the previous three continuing qualification evaluations, or the continuing qualification evaluations from the previous 2 years, whichever covers a longer period.	
E1.33.f.	Comments obtained in accordance with § 60.9(b);	
E1.33.g.	A record of all discrepancies entered in the discrepancy log over the previous 2 years, including the following:	
E1.33.g.1.	A list of the components or equipment that were or are missing, malfunctioning, or inoperative.	
E1.33.g.2.	The action taken to correct the discrepancy.	
E1.33.g.3.	The date the corrective action was taken.	
E1.33.g.4.	The identity of the person determining that the discrepancy has been corrected.	

* Note: If the sponsor has an approved discrepancy prioritization system, this item is satisfied by describing how discrepancies are prioritized, what actions are taken, and how the sponsor will notify the NSPM if the MMI has not been repaired or replaced within the specified timeframe.

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APPENDIX F TO PART 60—DEFINITIONS AND ABBREVIATIONS FOR FLIGHT SIMULATION TRAINING DEVICES

BEGIN INFORMATION

- SOME OF THE DEFINITIONS PRESENTED BELOW ARE REPEATED FROM THE DEFINITIONS FOUND IN 14 CFR PART 1, AS INDICATED PARENTHETICALLY

END INFORMATION