

Please accept these as my comments to the proposed Appendix A to Part 60, Qualification Performance Standards (Airplane Flight Simulators). These comments are based on the FAA version of the proposed Part 60 on their website http://www1.faa.gov/nsp/Part60/Appendix_A/nprm_appA.doc, and http://www1.faa.gov/nsp/Part60/Appendix_A/Attch_1.doc through http://www1.faa.gov/nsp/Part60/Appendix_A/Attch_7.doc

1. The proposed standard does not address the knowledge, training, or proficiency of flight simulator technicians (the maintenance technicians who maintain the devices). In general, there is no apparent requirement for individuals to meet any particular knowledge or experience level, or for management to insure that those persons conducting tests, maintenance, etc., or those persons operating the devices are doing so safely and properly (only the requirement in 60.5f(6), or paragraph 5f(6), to identify the criteria used to assign people to specific tasks). Some places the phrase "specifically qualified personnel" is used without any method of verifying that anyone presented is, in fact, qualified and competent. Additionally, it does not appear that "specifically qualified personnel" is defined nor requirements for the qualification given.

2. There is no apparent requirement for flight simulator maintenance personnel to be screened or otherwise identified for security (although some employers may impose some requirements on prospective employees). These people will have access to devices that will allow them to gain significant knowledge and experience in "flying" various aircraft. From a post September 11, 2001 standpoint, shouldn't security also be a management and FAA consideration?

3. The proposed standard does not include non-pilot or non-flight engineer users. Aircraft maintenance personnel, and others, do emergency procedures, engine run-up, and taxi training in flight simulators. Are they to be excluded (can they conduct training on devices that are no longer qualified)?

4. The proposed standard does not appear to allow or provide for the maintaining of a separate, maintenance only, discrepancy log. Some items, relevant to maintenance only, may need to be documented by shops to provide a logistics trail or to provide justification for purchase. These items could confuse simulator users and might create a situation where DR's unrelated to the operation of the simulator or simulated aircraft cause a user to overlook a DR that might be of significance to their training. DR's related to the simulator that do not effect the operation (from the trainee crew perspective or instructor perspective) of the simulator such as DR's for bench work parts, shop type supplies, touchup paint, adhesives, seat covers, frayed pages in instructor reference books, missing retainers on printed circuit boards, cleaners needed, etc.) should be maintainable in separate DR records.

5. Can the DR "book" be computerized with a terminal at or near the simulator?

6. Not all shops have people who understand configuration management (CM) or the issues that surround CM. The new rules might need to spell out more specifically the requirements or goals/objectives of your rule.

7. The QPS requirements should include checks of safety systems (emergency stop check, etc.) as part of the inspection process. If FAA personnel are to physically inspect the devices, shouldn't they have some assurance that safety equipment and functions work correctly?

8. In the QPS Requirements following 60.5 rule language (what would be 60.5f(20), or paragraph 5f(20)). I submit that the requirements for devices rented or borrowed for brief periods should be excluded from the broad range of these requirements. Then add requirements for rented or borrowed devices that simply require that they are within the calibration period for the device, examined for gross defects or damage, how they are to be adjusted for accuracy,

and how the devices are to be maintained in good working order during the duration of the rental or loan.

9. Add language that requires some method to identify who is qualified to operate the various items of equipment noted in 60.5f(20) and any applicable new paragraph. The use of 60.5f(6) only requires the sponsor to document how they determine who is qualified without establishing any standard.

10. To insure good, uninterrupted training, shouldn't the FAA require a minimum average level of reliability as evidenced by Mean Time Between Failures, Mean Time Between Unscheduled Maintenance, or some other objective, definable criteria?

11. Proposed 60.5f(5). Shouldn't this also include maintenance and control of appropriate configuration management documents and computer source code?

12. Proposed 60.9b(1). It is not clear if this means that the comments should be acknowledged or that a mechanism be established to insure that the comments are received and considered.

13. Proposed 60.13f. Shouldn't this be limited to data that related to something that is simulated on the sponsor's flight simulator (being specific to the tail number)? If not, shouldn't the data be significant rather than burden the FAA and the sponsor with requirements that may not be meaningful?

Additionally, why "immediately" instead of within some reasonable period of time?

14. Proposed 60.14a. Is this intended to require the sponsor (sponsoring organization) to have on hand all special equipment at all times or to have specifically qualified personnel (whatever that means) needed at least during the 12 hours a day, five days a week during which FAA can no-notice inspect? Paragraph 60.14c suggests that FAA will provide 24 hours notice; however, that may not be sufficient time to locate and acquire any equipment required. Perhaps the sponsor should be able to notify FAA that required people or equipment is not available when requested then provide a date when the sponsor can comply with the FAA request?

15. Proposed 60.15o. The requirement for an electronic format MQTG has an undefined format that has the potential for significant expense to simulator activities. Will the FAA require violation of the agreements under which the data was provided or copyrights? If all that is required is a copy of a scanned document, please so state.

16. Proposed 60.16d. Please define modify. This is a very broad statement which, carried to the extreme, could mean that even modifications necessary for maintenance personnel safety could not be done without the processing referenced in this Part. Additionally, there can be "modifications" done by maintenance during maintenance periods or technical modifications performed as maintenance "workarounds" while parts are obtained or repaired. This also precludes modifications relating to reliability, maintainability, or supportability that do not effect any crewmember or the operation of the simulator from the trainee's perspective. This requirement would make FAA the configuration control board for all qualified devices.

17. Proposed 60.20. This requirement would create significant needless work by maintenance personnel if taken literally. Perhaps if the wording considered the case where an item is discovered during preflight; however, the maintenance person took corrective action (e.g., replaced light bulbs, tightened knobs) prior to completion of preflight or first training use. If an item is discovered during other maintenance, not by a user, that also should be excluded from mandatory documentation. Nothing should preclude a site from establishing a policy of requiring such documentation should they chose to do so for man-hour accounting, logistics tracking, etc.

18. Proposed 60.23b. Why is this limited to safety of flight? Shouldn't the safety of everyone be considered? Suggest rewording to read, "modification is necessary for safety reasons."

19. Proposed 60.23c. Please define modify. This is a very broad requirement and does not allow, by rule language, user judgment. This should apply to relevant modifications that effect the user (form, fit, or function) or the QOTG performance. Modifications for reliability, maintainability, or supportability by or for maintenance might be excludable when not apparent to or effecting the user. Also, suggest retroactive notification should safety dictate modifications that might be or are apparent to the users.

20. Proposed 60.23g. Not all modifications may effect the MQTG so shouldn't the rule language reflect that the MQTG must be updated if the modification effects areas effected by or tested by the MQTG. An example might be the addition of a non-functional control head installed for spacing but whose functions are not simulated.

21. Proposed 60.25b. This requirement presumes that any possible spare or replacement part is or will be available within 7 calendar days. Perhaps if the user were simply required to notify the NSPM so that the NSPM can monitor such issues? Certainly any component should be repaired or replaced within 7 calendar days if the replacement or repair part is available. This requirement also appears to presume that the "missing, malfunctioning, or inoperative component" is hardware. Is the proposed 60.25 to apply only to hardware? If not, seven days may not be sufficient to troubleshoot, modify, checkout, and install for daily use the software necessary to correct.

22. Proposed 60.27a(4). Please define "disassembled . . . to such an extent." Maintenance frequently disassembles part of the simulator during troubleshooting or repair and such disassembly occasionally renders the simulator incapable of use for training, evaluation, or experience activities. Consider the removal of crew seats for access to flight control linkage or removal of printed circuit cards from the computer. Such routine maintenance actions should not render the simulator not qualified. I do note and consider the verbiage in 60.27b(2); however, this requires contacting the NSPM before the qualification is restored. I would not expect NSPM to have someone on duty 24x7 to field telephone calls (or fax's) from simulator activities requesting restoration of qualification. Perhaps some more details about how much disassembly or other conditional requirements before a shop would be required to get permission to continue use. Alternatively, a shop can certify that the device is restored to full operation with an explanation provided NSPM for NSPM's review.

23. Proposed 60.35a would appear to be an exceptionally broad, sweeping requirement, particularly since it does not consider the relevance of the "equipment and appliances installed and operating" to training or rating checks. How extensive should the simulation be?

24. Attachment 2 to Appendix A to Part 60, Figure 3 Note. The comment "If the simulator weight changes for any reason" should be clarified. What tolerance? The number of people on board will effect the weight as will someone leaving a briefcase on the flight deck.

25. Attachment 2 to Appendix A to Part 60, Figure 4 Note. The comment "If the simulator weight changes for any reason" should be clarified. What tolerance? The number of people on board will effect the weight as will someone leaving a briefcase on the flight deck.

26. Attachment 4 to Appendix A to Part 60. Add or clarify the definitions noted in the comments above.

27. Attachment 5 to Appendix A to Part 60. Since Edward Cook has been identified as having a PhD, shouldn't this sample request address him as Dr. Edward Cook or Edward Cook, PhD?

Appendices B, C, and D should be edited, as relevant, for the essence of the comments above.