

DISPOSITION OF PUBLIC COMMENTS ON PROPOSED POLICY STATEMENT ANM-115-05-016, MINIMIZING POTENTIAL INJURY HAZARDS OF DEPLOYMENT MECHANISMS			
Commenter	Comment	Requested Change	Disposition
1. ATA (American Airlines)	The general policy stated in this document does not constitute a new regulation, and also does not constitute a change in American Airlines general policy. American Airlines believes the guidance on the pencil snap test will add value to determining deployment mechanisms' compliance.		We agree with the comment.
2. ATA (United Parcel Service)	The guidance material is intended to minimize potential injury hazards of deployment mechanisms of interior features. The proposed guidance provides a good method to evaluate interior components for hazardous design features. Our concern is that the FAA indicates that they intend to apply the guidance to areas in the cabin beyond seats and folding carts. They include the statement, "Deployment mechanisms that have potential to cause injury are considered hazardous and noncompliant with 25.601." UPS requests that the FAA clarify that the cabin does not		We agree with the comment. This policy memo is intended to be used to evaluate deployment mechanisms in the passenger cabin and in the flight deck. It is not intended to be applied to the cargo handling systems. We revised the policy memo to clarify this point.

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	<p>include the main deck cargo compartment. Many cargo locks feature a spring loaded mechanism to ensure adequate cargo retention. These locks are commonly known as 'bear traps'. These cargo locks would most certainly snap a No. 2 pencil as suggested as the bench mark per the FAA proposed guidance. Although these locks could potentially injure an untrained person, UPS ensures that all load personnel are trained in safe practices to be used when deploying or retracting cargo locks. We believe the application of the guidance in the 'cabin' is desirable, however the cargo compartments should be excluded because no cargo locks exist that would provide an equivalent level of safety for cargo retention and also meet the proposed guidance.</p>		

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3. Boeing	<ol style="list-style-type: none"> 1. The order in which the pass/fail criteria are written in the proposal is confusing. Our suggestion is to rearrange the order of this information, as indicated above. 2. The pass/fail criterion needs to be explicitly clear. The proposed wording of the failure criteria states “significantly marked/crushed” (which is vague), and provides specific dimensions only parenthetically. We suggest making the dimensions the criteria and eliminating the subjective “marked/crushed” statement. 3. A simple figure (“Figure X”) should be added to define how to measure the pass/fail dimensions. It is not clear from the proposed text that the dimensions in parenthesis are a measure of the remaining pencil material (that is what we assumed). 	<p>Boeing proposed the following revisions: <i>“Make certain that the pencil remained in position during the test(s). If the pencil snaps in two, or is significantly marked/crushed (e.g. less than 4mm post test), from any of the tests, the mechanism is considered to be noncompliant with §25.601 and could rise to the level of an unsafe condition. If there are less severe but recognizable markings on the pencil (e.g. between 6mm and 4mm post-test) the mechanism is considered to be <u>If the pencil is crushed such that the remaining pencil material measures</u></i></p>	<p>We revised the policy memo to make the text related to pass fail criteria more general. Because of these changes we determined that including the commenter’s proposed text and a figure to the policy memo are not necessary.</p>

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		<p><i><u>more than 6 mm, the test passes and the mechanism is considered compliant with §25.601 If the pencil is crushed, such that the remaining pencil material measures 6 mm or less, as shown in Figure X, the test fails and the mechanism is considered noncompliant with §25.601. These mechanisms cannot be approved as part of the type design until corrective action is taken to eliminate the non-compliant condition compliance. For those situations ...”</u></i></p> <p><u>ADD:</u> A simple “Figure X” that defines how to measure the pass/fail dimensions.</p>	

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4. Boeing	<p>Boeing requested including test criteria that address tolerances and describe methods that will ensure reliable test data are produced.</p> <p>The proposed policy does not discuss how the FAA developed the test criteria, nor does it ensure that the test described can be reliably repeated. The pass/fail criteria dimensions in the policy are in the range of common tolerances and, therefore, test accuracy can easily be lost when tolerances are not accounted for. For example, the criteria require a pencil of 7mm +/- 1mm, which would allow a test to begin with a 6 mm pencil. However, according to the proposed policy, a 6 mm pencil is considered a failed condition. All dimensions, including the starting dimension of the pencil, could be easily affected by tolerance, and the policy does not address tolerance to ensure that reliable tests can be conducted. We request that the FAA revise the policy to address this.</p>		<p>We revised the policy memo to specify that a minimum of three tests should be performed to ensure reliable test data. We also revised the pass/fail criteria so it is more general.</p>

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5. Weber Aircraft LP	<p>Weber would like to point out the fact that the subject policy is intended to address items which experience has shown to be hazardous or unreliable; however, Weber has demonstrated that the method fails common features which have had a very good service record and have not been deemed hazardous or unreliable. Weber is requesting that since “tests” are defined by FAR to be carried out to evaluate questionable designs, a listing of the subsequent FARs be added which detail the requirements and pass fail criterion. As stated in the policy letter, this memo is not intended to constitute a new regulation; however, Weber considers the test method provided will create several unique outcomes and therefore is considered unfounded to provide a consistent means for determining safety.</p>		<p>We revised the policy memo by adding a limitation section to the alternate test criteria. This policy memo is not intended to be applied to those areas where potential injuries would not occur.</p>

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6. Weber Aircraft LP	<p>Weber would like to point out three facts:</p> <p>1) Regardless of the TSO level a product currently carries, the installer was required to evaluate all products to FAR 25.601 as part of the type certification basis.</p> <p>2) My certification staff and myself have reviewed the modifications on at least 40 years of seat designs and can soundly state at designing seats is an evolutionary process. Most of the moving part designs are therefore based on sound engineering practices.</p> <p>3) Based on item 2, common movable parts that are acceptable under TSO-C127a will be rejected on TSO-C39b seats. Needless to say, the burden on unnecessary evaluations will be felt by both industry and the FAA.</p>		<p>1) We agree that the installer is required to evaluate all products in accordance with § 25.601 as part of the type certification basis.</p> <p>2) We acknowledge the commenter’s experience with airplane seat designs.</p> <p>3) The intent of the policy memo is to expand the generally good practices from airplane seats and folding carts to other areas of the cabin. Hazardous details are unacceptable per TSO-C127a and section 25.601. The alternate method is one way, but not the only way to attempt to evaluate a suspect mechanism. The goal is to prevent serious injuries from deployment mechanisms. In support of this goal, we have determined that the proposed simple, inexpensive test does not create an unnecessary burden.</p>

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7. Weber Aircraft LP	Weber would like to point out that the examples used are related to significant load path related articles (legrests and foldable seats). As written, the policy letter and means of evaluation does not limit review to specific areas like those used as examples and demonstrated to be non-compliant; therefore, armcaps, springed items like literature pockets, which have small openings or even secluded areas on movable seat structure (big enough to fit a pencil into) require the same level of scrutiny.	Weber requested a clarification to understand the FAA’s position on identifying that best practices have been available for some time. Weber would request clarification on exactly what form of guidance (ARPs, SAEs, ACs...etc) is being referred to by which this method as been evaluated and shown to provide consistent results.	We agree that the evaluation of deployment mechanisms is not limited to the examples provided. However, this policy is not intended to be applied to those areas where potential injuries would not occur. The alternate method is essentially used only when a suspect mechanism is discovered. Existing industry standards and practices, and the regulations do not permit hazardous mechanisms. The pencil test method has been used informally for many years as an indicator that a mechanism may be hazardous. We have added “the above” to clarify our statement of which industry practices have been around for some time.

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8. Weber Aircraft LP	Please clarify that the review referenced is of seats as installed in the aircraft under normal operation or is it also required for maintenance operation.		The review is not limited to seats as stated above. The mechanism is assumed to be in a normal operation state and not in other states such as a maintenance condition. We have revised the memo to clarify this point.
9. Weber Aircraft LP	Clarify the definition of “user” (5th to 95th...etc). The definition of “reach” is also questioned in that the review area for a 95th occupant will be significantly different than child. In addition, the review area will change dramatically for an unbelted occupant which is reaching under the seat to retrieve baggage or loses items within the seat gaps (change falling in between the back and bottom cushions). In addition, child's hands are small and can reach into small voids and openings.		We have replaced the terms “user” and “reach” with the word “accessible.” If a mechanism is accessible while in normal operation, it is considered exposed and subject to the severity test.

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10. Weber Aircraft LP	<p>What is the source of data which supports usage of this particular type pencil (size and material) to determine adequate levels of safety? Are examples available of holders since the more rigid the holder, the more opportunity that the failure mode will be at this location?</p>	<p>Include a definition of “quickly as possible”. In addition, is there a minimum number of times of activation which should be used to determine compliance?</p>	<p>We chose the 7mm HB softwood pencil because it is a readily available inexpensive device. The aviation industry has informally used the pencil test method for many years as an indicator that a mechanism may be hazardous. The intent of the policy memo is to provide a standardized test method. We revised the policy memo to clarify that more exotic “finger” test devices are available, but beyond the scope of this memo. We replaced the term “quickly as possible” with “as quickly as is expected in normal service”. As previously stated, the policy memo has been revised to state that a minimum of three tests should be performed.</p>

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11. Weber Aircraft LP	What is the source of the data which supports the amount of crushing that is noted to determine a pass/fail condition?	Please clarify the types of marks which would be deemed acceptable. For example, are broad based indentions which would come from compression applied points acceptable while deep cuts or slices also acceptable if they meet the minimum imposed depth requirement?	The pass/fail crush amounts were generally based on a small finger size and intended to standardize the method more than provide an absolute pass/fail. We revised the criteria to be more general. If the pencil snaps in two, or is significantly marked/crushed, the mechanism is considered to be noncompliant. If a different method is proposed we will evaluate it based on its own merit. This method is one but not the only means of compliance.