

DISPOSITION OF FAA COMMENTS

Policy Statement PS-ANM-25-19, *Flightcrew Procedures and Training for Addressing Fire Hazards in the Flight Deck*

Prepared by Robert Hettman, ANM-112

No.	Comment	Requested Change	Disposition
Commenter: AFS-202/AFS-220/AFS-280			
1.	AIR Policy Statement is not appropriate vehicle for Ops procedure because a disconnect between the proposed Policy Statement and existing AFS guidance could occur if either of the documents are updated in the future.	Consider the following: 1. Develop/amend existing guidance with AFS or 2. Remove specific procedures/training references and replace them with references to existing guidance.	We agree and clarified section 3 associated with specific training requirements or operational procedures. This policy is not intended to require certain specific steps for an operational procedure. We intended to describe considerations that should be made when developing emergency procedures in accordance with § 25.1585(a)(3) so that the procedures are consistent with the location and intended use of emergency equipment.

No.	Comment	Requested Change	Disposition
Commenter: Loran Haworth, ANM-111			
1.	In the Summary paragraph below, I recommend clarifying the words “would provide methods.” “This policy statement <u>would provide methods</u> that can be used in consideration of potential fire hazards in the flight deck for compliance with Title 14, Code of Federal Regulations (14 CFR) 25.1301(a)(1), 25.1439(a), and 25.1585(a)(3).”	Clarification of words “provide methods.” Is the intent to provide methods of compliance? What does this mean in practical terms? A means of compliance?	We agree and changed the summary paragraph to note that the policy describes methods of compliance.

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2.	Recommend adding § 25.1302, <i>Installed equipment and systems for use by the flightcrew</i> , to the regulatory list since the policy regards equipment to be used by the flightcrew.	Add § 25.1302 to the “Summary” and “Current Regulatory and Advisory Material” paragraphs on page 1.	We disagree and did not change the policy as requested. Section 25.1302 applies to systems and equipment intended for flightcrew members’ use in operating the airplane from their normally seated positions on the flight deck. The systems and equipment discussed in this policy are not used to operate the airplane.
3.	Recommend adding § 25.1322, <i>Flightcrew alerting</i> , since fire and smoke alerting is a required part of part 25.	Add § 25.1322 to the “Summary” and “Current Regulatory and Advisory Material” paragraphs on page 1.	We disagree and did not change policy as requested. This policy provides guidance associated with fire events within the flight deck. Existing 14 CFR part 25 regulations do not require a smoke detection system in the flight deck so providing an alert in accordance with § 25.1322 is not required. To avoid confusion, we did not reference § 25.1322 in this policy.

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4.	<p>The following should be added and provides the rationale for adding this section:</p> <p>“Section 25.1302 applies to installed systems and equipment intended for flightcrew members’ use in operating the airplane from their normally seated positions on the flight deck. The applicant must show that these systems and installed equipment, individually and in combination with other such systems and equipment, are designed so that qualified flightcrew members trained in their use can safely perform all of the tasks associated with the systems’ and equipment’s intended functions.”</p>	Add wording as noted to the “Current Regulatory and Advisory Material” section.	We disagree and did not change the policy as requested. The systems and equipment discussed in this policy, such as emergency equipment, are not used to operate the airplane and are not used while in the flightcrew members’ normally seated position.
5.	<p>The following wording should be added:</p> <p>“Section 25.1322(a) states Flightcrew alerts must provide the flightcrew with the information needed to: Identify non-normal operation or airplane system conditions, and determine the appropriate actions, if any.”</p>	Add wording as noted to the “Current Regulatory and Advisory Material” section.	We disagree and did not change the policy as requested. See response to Haworth comment #3 referring to § 25.1322.
6.	<p>Recommend adding the following words in quotes under “Relevant Past Practices” section:</p> <p>The equipment includes “smoke and fire alerting,” a fire extinguisher, portable PBE, and crash axe.</p>	Add words “smoke and fire alerting.”	We disagree and did not change the policy as requested. See response to Haworth comment #3 referring to § 25.1322.

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7.	<p>Regarding the following statement in the “Background” section on criteria:</p> <p>“The FAA also evaluates fire extinguisher installations for compliance with part 25 regulations using the same criteria as indicated by AGC.”</p> <p>If the fire extinguisher is considered equipment for use by the flightcrew, § 25.1302 will have coverage. In other words, it might not be the same criteria.</p>	<p>Recommend saying something to the effect that the FAA uses the same criteria as AGC, but also part 25 criteria or something to that effect.</p>	<p>We agree and clarified the background to indicate that the FAA evaluates fire extinguisher installations using the same general criteria as indicated by AGC.</p>
8.	<p>Add additional references as underlined below. I just noted the list contains rules not policy as indicated by the title. Should this paragraph contain rules or policy like in ACs?</p> <p>“This policy provides guidance ... to meet the airworthiness standards in §§ 25.851, 25.1301, <u>25.1302</u>, <u>25.1322</u>,...”</p>	<p>Add additional references and change the title from policy to requirements or rules along with the associated verbiage.</p>	<p>We disagree and did not change the policy as requested. See response to Haworth comments #2 and #3 referring to §§ 25.1302 and 25.1322, respectively.</p>
9.	<p>Regarding the “Installation of Required Equipment” paragraph: What about equipment to alert the flightcrew of the fire?</p>	<p>Add words to indicate alerting equipment is part of the installation.</p>	<p>We disagree and did not change the policy as requested. See response to Haworth comment #3 referring to § 25.1322.</p>

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10.	<p>I recommend adding the following reference under the “Installation of Required Equipment” section:</p> <p>“25.1561 (b) Each location, such as a locker or compartment, that carries any fire extinguishing, signaling, or other lifesaving equipment must be marked accordingly.”</p>	<p>Add § 25.1561 as new paragraph 1.5. Renumber proposed paragraph 1.5 as paragraph 1.7.</p>	<p>We partially agree. We agree with referencing § 25.1561, but disagree with adding the requested text. Instead, we revised paragraph 1.5 as follows:</p> <p>“If emergency equipment is not in clear view, multiple placards may be necessary to identify the equipment in accordance with §§ 25.1541 and 25.1561.”</p>
11.	<p>I recommend adding the following reference under the “Installation of Required Equipment” section:</p> <p>“In accordance with 25.1302 The applicant must show that these systems and installed equipment, individually and in combination with other such systems and equipment, are designed so that qualified flightcrew members trained in their use can safely perform all of the tasks associated with the systems’ and equipment's intended functions.”</p>	<p>Add § 25.1302 as new paragraph 1.6. Renumber proposed paragraph 1.6 as paragraph 1.9.</p>	<p>We disagree and did not change the policy as requested. See response to Haworth comment #2 referring to § 25.1302.</p>

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12.	<p>I recommend adding the following reference under the “Installation of Required Equipment” section:</p> <p>“In accordance with 25.1555 (d) (1) each emergency control must be colored red.”</p>	<p>Add § 25.1555 as new paragraph 1.8. Renumber proposed paragraph 1.6 as paragraph 1.9.</p>	<p>We disagree and did not change the policy as requested. This policy provides guidance associated with a fire located within the flight deck and does not refer to the use of any emergency controls. In general, emergency controls are provided for fire extinguishing systems used in areas outside the flight deck, which is outside the scope of this policy. Since § 25.1555 is not referenced in this policy, additional guidance associated with this regulation is not relevant.</p>

No.	Comment	Requested Change	Disposition
Commenter: Joe A. Brownlee, ANM-160L			
1.	<p>Paragraph 2.7 states: “If procedures advise the flightcrew to exit their seats to combat a fire, then it should be shown that either there would be sufficient time and air flow to do so without the use of PBE, or emergency equipment should be within the flightcrew’s reach while wearing an oxygen mask.”</p> <p>Paragraph 2.8 states: “If the stationary oxygen mask and oxygen hose are not long enough to allow the flightcrew to reach the emergency equipment with the mask donned, the procedures should account for removing the mask.”</p>	<p>We disagree with paragraph 2.8 because the pilots should not have to remove the masks and risk incapacitation. This should be rewritten as follows:</p> <p>“Stationary oxygen mask supply hoses must be long enough, and emergency equipment must be so located that the flightcrew can reach and operate required emergency equipment without removing oxygen masks.”</p>	<p>We partially agree. We disagree with revising paragraph 2.8 as requested. However, we agree that paragraph 2.8 conflicted with paragraph 2.7 as proposed. Instead, we have clarified paragraph 2.7 and deleted paragraph 2.8. While we consider it a best practice when the flightcrew can reach certain flight deck emergency equipment while wearing an oxygen mask, there is not a specific regulatory requirement under part 25 requiring such installation.</p>

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No.	Comment	Requested Change	Disposition
Commenter: Christy Helgeson, ANM-160S			
1.	Remove all references to flightcrew training from this policy statement. Flightcrew training falls under the responsibility of flight standards and not aircraft certification. Suggest aircraft certification convey the training concerns/elements to flight standards for them to incorporate into an appropriate flight standards document.	<ul style="list-style-type: none"> • Page 1, subject line • Page 3, policy section • Page 5, flightcrew training section • Page 6, conclusion 	We partially agree. We agree that flightcrew training falls under the responsibility of Flight Standards, not aircraft certification. However, we disagree that all references to flightcrew training should be removed from this policy. Instead, we clarified text throughout the policy associated with specific training requirements or operational procedures. This policy is not intended to require certain specific steps for an operational procedure. We intended to describe considerations that should be made when developing emergency procedures in accordance with § 25.1585(a)(3) so that the procedures are consistent with the location and intended use of emergency equipment. We also revised the policy to refer to specific guidance in AC 120-80 related to flightcrew training.
2.	Page 4, paragraph 1.5 “normal field of view.” What does this mean? This term is ambiguous. Suggest the term be more specific since there are many “field of view” references used within aircraft certification (forward field of view, primary field of view, secondary field of view, flightcrew’s primary field of view, optimum visual zone, etc.).	Revise paragraph 1.5 as follows: “Multiple placards might be necessary to identify the location if the equipment is not installed in a location in a normal field of view for the flightcrew <u>that the pilot can easily see, unobstructed, from his or her seat with the seatbelt and shoulder harness (if installed) fastened.</u> ”	We partially agree. We agree with clarifying paragraph 1.5, but disagree with adding the requested text. Instead, we revised that section to refer to §§ 25.1541 and 25.1561 as well as AC 25-17A, which contains additional guidance related to marking the location of emergency equipment, and more specifically fire extinguishers.

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3.	Page 4, paragraph 2, “fire <i>originating</i> in the flight deck.” Emphasis should be placed on fires that are confined within the flight deck that a crew could address and not where the fire <i>originated</i> from. While I agree that many fires a crew may choose to fight will originate from the flight deck, there may be fires that don’t originate in the flight deck that a crew could also choose to fight.	Revise as follows: “Flightcrew procedures should address a fire originating in the flight deck <u>fires contained within the flight deck that could be fought by the flightcrew or by other crew members.</u> ”	We agree. We clarified section 2.1 to remove the term “originating” and to provide specific reference to emergency procedures required per § 25.1585(a)(3). We made editorial changes to the text to advise that flightcrew procedures should address fires within the flight deck that may be fought by the flightcrew or other crewmembers.
4.	Page 4, paragraph 2.4, use of 100% oxygen. I don’t agree that every scenario where smoke, fire, or fumes are evident within the flight deck should require the use of 100% oxygen. I have heard of fires within the flight deck that were fueled (made worse) by the use of 100% oxygen. I think this decision should be left up to the crew.	Revise as follows: “ The oxygen mask should be used in the 100% oxygen setting as long as <u>The flightcrew should consider setting oxygen to 100% when</u> smoke, fire, or fumes are evident in the flight deck.”	We partially agree, but did not revise the policy. We agree that a fire can be made much worse when exposed to high oxygen concentrations. However, we do not agree that such a condition is related to the mask regulator setting. The oxygen supply to the mask from the supply source is essentially 100% oxygen, which is one reason that extreme caution should be taken if fighting a fire while wearing PBE intended for stationary purposes. In accordance with § 25.1439(b)(5), PBE must be designed to prevent any outward leakage causing significant increase in the oxygen content of the local ambient atmosphere. However, if the supply hose is damaged it could contribute to the fire as well as deplete the protective breathing supply to multiple crewmembers since all crewmembers typically share the same supply source.

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5.	Page 4, paragraph 2.6, assistance from available cabin crew. Careful consideration should be made when assessing when to get an available cabin crew member involved with fighting a fire contained within the flight deck. Opening the flight deck door could cause the spread of smoke, fumes, or noxious gases within the flight deck to occur more quickly. The flight testing I've participated in for smoke, fumes, or noxious gases within the flight deck were all very dependent on the flight deck door being closed to ensure the smoke evacuation could be readily accomplished.	Suggest including a statement that cautions the crew of the possibility that the situation could be made worse once the flight deck door is opened.	We disagree. In this scenario, the flightcrew would be protected because they would have already donned their stationary oxygen equipment. Since the source of the fire is not obvious, and hidden somewhere within the flight deck, assistance may be necessary from any other available crew to possibly locate and extinguish the fire. The flightcrew's primary responsibility is still to maintain airplane control and a high workload is already likely due to the possible need for emergency descent and landing at the nearest available airport.
6.	Page 4, paragraph 2.7, flightcrew exiting seat to combat a fire. How does TAD propose "...sufficient time and or air flow to do so without the use of PBE..." be demonstrated for compliance? I can think of numerous scenarios where the time and/or air flow would vary (how quickly the fire is burning, how much smoke is being produced depending on what is on fire, if visibility is at all reduced due to smoke in the flight deck, how long a pilot can hold their breath under excursion, etc.). Why would a procedure advise the flightcrew to exit their seat to combat a fire? I would expect such a procedure to contain element the crew	Suggest clarifying this section to include the considerations a pilot needs to take into account to determine if he/she should leave the seat to combat a fire. I'm not aware of a procedure that advises a flightcrew member to leave their seat to combat a fire.	We partially agree. We clarified section 2.7 with respect to demonstrating that there would be sufficient time and airflow to access emergency equipment without the use of PBE. However, we disagree with adding considerations a pilot needs to take into account to determine if he/she should leave their seat to combat a fire. The time to access and use emergency equipment can be effectively estimated or determined via test. AC 25-9A contains procedures that can be used to demonstrate the capability to evacuate continuously generated smoke, although such a demonstration is not specifically required in part 25 regulations.

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	should take into consideration to determine when to leave their seated position to combat a fire. I suggest a clarification or statement of intent be added to this section.		For any fire scenario, there are multiple decisions that the flightcrew must make quickly and “best judgment” will always be needed. Due to the number of widely varying fire scenarios, it is not the intent of this policy to capture specific procedures that would apply to every scenario. Rather, this policy provides general considerations that should be made depending on the airplane configuration and type of operations being conducted. We are aware of emergency procedures for smoke/fire/fumes that advise the flightcrew to use a fire extinguisher to put out a fire if the source is obvious and the fire can be extinguished quickly. For such procedures, it should be assumed that the flightcrew member accomplishing such a task must leave their seat to do so.
7.	Page 5, effect of policy statement, “...must not depart from this policy statement...” The use of must here is very strong and indicates any departure from this policy statement by anyone finding compliance must justify it to ANM-112 management and open an IP.	Should changing “must not depart” to “should not depart.”	We agree and have modified this text accordingly.

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No.	Comment	Requested Change	Disposition
Commenter: Leslie Taylor, ACE-111			
1.	Page 1, Summary lists three applicable part 25 rules while the Current Regulatory and Advisory Material section on Page 1 lists seven part 25 rules and two part 121 rules.	Change Summary to: “This policy statement would provide methods that can be used in consideration of potential fire hazards in the flight deck for compliance with Title 14, Code of Federal Regulations (14 CFR) rules listed in the Current Regulatory and Advisory Material section.” Or delete the additional rules.	We partially agree. We disagree that the Summary should reference all of the part 25 regulations listed under the “Current Regulatory and Advisory Material” section. However, we agree that the Summary was not entirely correct as proposed. We revised it to state that the policy provides a method of compliance with 14 CFR 25.851(a)(2), in addition to the other three regulations already cited. The other part 25 regulations listed elsewhere in the document are related to the policy, but this policy is not intended to be used to show compliance with those other rules. For example, this policy does not provide details regarding the type of fire extinguisher used, but rather refers to regulations and advisory materials that contain additional information.
2.	Page 1, Current Regulatory and Advisory Material, has three paragraphs explaining the rules listed in the Summary, but nothing for the additional rules.	Add paragraphs for the additional rules.	We agree and clarified this policy as suggested.
3.	Page 2, Current Regulatory and Advisory Material, lists four advisory circulars but has only three explanatory paragraphs following the bullets.	Add paragraph for AC 25-17A or delete the AC.	We agreed and added a brief summary of the applicable section in AC 25-17A.

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4.	Page 4, Section 2, Flightcrew Procedures, does not list the fire fighting procedure to not reset circuit breakers unless the system and equipment is needed for safe flight and landing.	Add the procedure or reference additional policy/AC where it is listed.	We disagree with the requested change. We intentionally left out specific procedures referenced in other guidance materials. AC 120-80 contains FAA guidance regarding resetting circuit breakers. General information related to use of circuit breakers is beyond the scope of this policy.

No.	Comment	Requested Change	Disposition
Commenter: Ron McElroy, ACE-117C,			
1.	Flight Deck Security	Policy should also consider impact of flight deck security procedures upon execution of emergency fire hazard procedures in the flight deck, to include opening of the flight deck access door and communication with the cabin crew.	We agree that flight deck security issues should be considered whenever the flight deck door is opened. However, we did not change the policy as requested. This policy contains general guidance associated with in-flight fires that are not addressed in other guidance materials, and specific details related to security issues fall outside the scope of this policy.
2.	HAZMAT	Policy should also consider inclusion of training the physiological impact of specific HAZMAT smoke, fire, fumes events, to include HAZMAT cargo briefings, unique or special procedures to be followed, especially if different than non-specific HAZMAT events.	We disagree and did not change the policy as requested. Issues related to HAZMAT, or the dangers related to specific types of smoke or other harmful gasses that could be released in to the air as a result of a fire are outside the scope of this policy.