NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N8110.99

01/23/04

Cancellation
Date: 01/23/05

SUBJ: HOW TO USE ISSUE PAPERS IN AIRCRAFT CERTIFICATION

1. PURPOSE. This notice guides Directorate and Aircraft Certification Office (ACO) staffs on using issue papers for type certification programs. Included here is an issue paper process description, issue paper format (appendix 1), and a sample issue paper (appendix 2). These procedures were available in FAA Order 8100.5, Aircraft Certification Service Mission, and deleted from superseding Order 8100.5A.

2. DISTRIBUTION. Distribute this notice to the Washington headquarters level of the Aircraft Certification Service, the Flight Standards Service, and Office of Environment and Energy; to the branch level of the regional aircraft certification directorates and regional flight standards divisions; to all aircraft certification field offices; the Aircraft Certification Branch and Regulatory Support Division at the FAA Academy; to the Brussels Aircraft Certification staff; and to all Aircraft Evaluation Groups.

3. ACTION.

a. FAA ACO staffs should use the issue paper procedures in this notice until we publish a new order incorporating them.

b. The procedures will be incorporated as appendixes in the new order.

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Manager, Aircraft Engineering Division

1. ISSUE PAPER PROCESS DESCRIPTION

1-1. Introduction. Issue papers provide a simple, structured means of accomplishing several necessary steps in the type certification process.

a. They provide a simple means for describing and tracking the resolution of significant technical, regulatory, and administrative issues that occur during the certification process. The issue paper process establishes a formal communication for dialogue of significant issues between the applicant, the ECAA (if applicable) and the FAA. The original issue paper process was established to keep track of outstanding certification issues that had previously been handled through letters and verbal exchanges. Without a traceable process for resolving certification issues, management was not always kept informed of the various issues. Furthermore, the lack of a formal coordination process between the FAA and the applicant left many open-ended certification issues which were not recognized until late in the program. With the development of issue papers, management and the project team now have a vehicle for the negotiation and resolution of certification issues while maintaining a standardized position within the FAA and a consensus with the applicant. They are invaluable tools for keeping an unbiased uniform certification basis between applicants and for keeping a remote accountable directorate both informed and involved in timely actions. When transmitted electronically, they provide an efficient means of assuring coordinated certification decisions.

b. Issue papers form a valuable reference for future type certification programs, and for development of regulatory changes. By describing significant or precedent-setting technical decisions and the rationales employed, they are ideal source documents. For example, the Certification Summary Report (if required by the accountable Directorate) may be generated by extracting from the issue papers the final issue resolution, and by deleting from the issue paper any proprietary information.

c. The most common type of issue paper defines a particular method of compliance as a result of peculiarities in the type design or the need to define specific conditions and/or establish the environment under which substantiation must be shown. In addition to the "method of compliance" type issue papers, certain categories of issues, regardless of their inherent controversy, will also be resolved via issue papers. These types of issue papers are defined below.

(1) Equivalent Level of Safety - ELOS findings will be granted when literal compliance with a certification regulation cannot be shown and compensating factors exist which can be shown to provide an equivalent level of safety (see 14 CFR §21.21(b)(1)). An issue paper is the vehicle for documenting the evolution and conclusion of the request for an equivalent level of safety finding. Furthermore, we have determined that an acceptable way in which to document the finalized ELOS findings would be for the certification office to prepare a memorandum containing the needed information for review and approval by the accountable directorate. The development and processing of the ELOS memorandum should normally occur

after the applicable issue papers have been finalized. It should be noted that the ELOS memo process is not intended to take the place of the issue paper process. While an issue paper may be the vehicle for initially generating an ELOS finding by the FAA, the ELOS memorandum is the way to communicate to the public the technical details that are the rationale for the FAA's determination of equivalency to the level of safety intended by the regulations.

(2) Special Condition - The basis for issuance and amendment of special conditions is 14 CFR §21.16. Under the provisions of §21.16, a special condition is issued only if the existing applicable airworthiness standards do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of novel or unusual design features of the product to be type certificated. The phrase "novel or unusual" applies to design features of the product to be certificated when compared to the applicable airworthiness standards. Special conditions will not be used to upgrade the applicable airworthiness standards when novel or unusual design features are not involved.

(a) The FAA develops issue papers to address novel or unusual design features for which there are no regulations or inadequate regulations. These issue papers are used for development of the basis, need and wording of special conditions. A special condition contains only such airworthiness standards as are necessary to establish a level of safety equivalent to that established by the intent of the applicable regulations. Special conditions are unique to the specific certification program in which they are issued, unless by special statement in the special condition. The Administrator has delegated authority for their issuance to the directorates or to the Aircraft Certification Service (AIR), for areas of responsibility not assigned to a directorate.

(3) Certification Basis (G-1) - designates the applicable airworthiness and environmental regulations (applicable noise and environmental findings), including Special Conditions, that must be met for certification as set forth by §§21.17, 21.27, 21.29 or 21.101, as applicable. It also designates applicable Special Federal Aviation Regulations. This issue paper should provide the definitive justification for selection of the certification basis, including specific amendment levels.

(4) Determination of Compliance (G-2) - provides a statement of the FAA procedural requirements, including those that define the applicant's responsibilities for showing compliance. For foreign manufactured airplanes to be eligible for an import type certificate, an applicant must show, and the FAA must find, that the type design complies with the U.S. type certification basis, G-1. Under the Bilateral Airworthiness Agreements the ECAA may be authorized to approve data used for showing compliance to the requirements in the G-1 issue paper. Therefore, the G-2 issue paper will also outline the responsibilities of the applicable ECAAs.

(5) Environmental Consideration (G-3) – designates the applicable environmental regulations, i.e., the regulations establishing standards for aircraft noise and for fuel venting and exhaust emissions for turbine engine powered airplanes.

(6) Export (Import) Requirements - Country (G-4) - For exported products the G-4 issue paper cites the extent of FAA findings of compliance with the country's airworthiness requirements on behalf of the ECAA. For imported products the G-4 issue paper serves to establish the function of the ECAA(s) for airworthiness certification, operating matters and additional compliance findings relative to those defined in the G-1 issue paper.

(7) It is conceivable that an issue paper might be required to examine issues that arise from a better understanding of environmental or other hazards that were not well understood in the past or that did not exist previously. Such items could include new scientific information on weather threats, such as the quantification of microbursts that occurred in the last 30 years, the substantiation of super cooled liquid droplets environment, cabin ozone hazards, increased HIRF threats, and other potential circumstances where the standards were developed in ignorance of a threat that has been recently identified.

d. FAA technical personnel will work closely with the applicant for the earliest practicable identification of significant issues that may require special emphasis for resolution. This step will usually require more detailed technical discussions, correspondence, review of design data and hardware, etc. The applicant should be encouraged to surface questions or issues that may require time or special study for resolution so that all significant issues can be identified as soon as practicable and do not become surprises at a later time.

e. Simple documentation of a particular method of compliance that is not controversial, or that does not fall into one of the categories listed in the Significant Issues section below, does not require an issue paper. Nevertheless, if documentation is desired by the ACO, the method of compliance should be documented using a Certification Action Item.

f. The applicant should be advised that routine items relative to showing compliance and work relationships would not normally be raised as significant issues unless some special problems are anticipated or develop during the course of the program. Routine items will be handled with the applicant by the project team, with decisions and actions documented in correspondence, data submittals, and file records of meetings, conversations, and events. In this regard, it should be recognized that what may be routine with an experienced applicant may need to be treated as a significant issue with an applicant who has limited or no current FAA type certification experience.

g. First priority should be placed on the identification, rather than the resolution, of significant issues prior to the initial Type Certification Board meeting. It is not expected that significant issues would be identified or resolved at initial project familiarization briefings, although some issues may become apparent during the discussions.

1-2. Significant Issues. The following items will be considered significant issues on major projects, requiring the development of issue papers:

a. Type Certification Basis (G-1) – as described in paragraph 1 above.

b. Determination of Compliance (G-2) – as described in paragraph 1 above.

c. Environmental Consideration (G-3). The FAA must obtain certain information for compliance with U.S. statutory environmental requirements in addition to the Federal aviation regulation requirements listed in the certification basis (see G-1 issue paper).

(1) For new type certificates the aircraft proposed for certification is required to comply with the provisions of 14 CFR parts 34 and 36 as part of the certification basis. Provided this is accomplished with no exemptions granted, FAA Order 1050.1, Policies and Procedures for Considering Environmental Impacts, excludes the additional requirements of an environmental assessment, a Finding of No Significant Impact (FONSI), or an Environmental Impact Statement (EIS). Should exemptions to either part 34 or part 36 be granted, an environmental assessment would be required under the provisions of FAA Order 1050.1.

(2) For new type designs, the FAA shall also issue a finding of regulatory adequacy pursuant to Section 611 of the Noise Control Act of 1972 (P.L. 92-574). This finding is in addition to required compliance with the applicable part 36 noise limit levels.

d. Export (Import) Requirements - Country (G-4) – as described in paragraph 1 above.

e. Rulemaking Actions (G-5) – as required by the manager of the accountable directorate. These include the issuance of Special Conditions per either §§ 21.16 or 21.101(d), as applicable, and actions on exemption petitions filed by the applicant per §11.25. An exemption is a temporary or permanent allowable non-compliance with a particular regulation for a specific product. In the case for a proposed special condition, it is important to note that the wording in the issue paper for the proposed special condition will become the foundation for the wording of the notice as published in the Federal Register.

(1) Proposed special conditions are drafted by an ACO in conjunction with an application for a TC, an amended TC, or an STC. The proposal is formulated with full participation by the accountable directorate and with an invitation to participate to any other interested persons deemed appropriate. The proposals, with full particulars and justification for each special condition, are forwarded to the accountable directorate. In cases where the FAA determines a special condition is appropriate, and the applicant indicates that they have or will voluntarily comply, the special condition nonetheless will be proposed. This is included in the certification basis and forms an exact record of the rules applicable to the product.

f. Equivalent Safety Findings proposed or made under the authority of §21.21(b)(1). The applicant is responsible for making the request for an equivalent level of safety finding. The applicant submits to the ACO the proposed equivalent level of safety with all necessary data required for the FAA to develop the issue paper and to make the finding of equivalent safety. The ACO then submits to the accountable directorate, through an issue paper, the proposed equivalent level of safety with recommendations that substantiates the proposal. An issue paper is the vehicle for documenting the evolution and conclusion of the request for an equivalent level

of safety finding. Furthermore, we have determined that an acceptable way in which to document the finalized ELOS findings would be for the certification office to prepare a memorandum containing the needed information for review and approval by the accountable directorate. The development and processing of the ELOS memorandum should normally occur after the applicable issue papers have been finalized. It should be noted that the ELOS memo process is not intended to take the place of the issue paper process. In documenting an equivalent level of safety:

(1) List the applicable regulation;

(2) Describe the features of the design that require the equivalent level of safety findings;

(3) Describe any design changes, limitations, or equipment imposed that are the compensating features which allow granting the equivalency; and

(4) Explain how the actions taken provide an equivalent level of safety to that intended by the regulation.

g. Unsafe Situations that could preclude certification as defined in §21.21(b)(2).

h. Areas of New Technology or novel design that do not require a Special Condition but may require the development of an acceptable means of compliance with existing regulations which would set a national precedent.

i. Items requiring the utilization of a Special Certification Review team for resolution per paragraph 2-15 of FAA Order 8110.4, Type Certification.

j. Changes in Interpretation - New interpretation/policy of existing regulations using precedent-setting new technology should be included in an issue paper at the early stages of the certification project.

k. All other issues that become controversial, or have a high level of public interest, or may otherwise require Type Certification Board action to resolve.

1-3. Issue paper Development.

a. New issue papers may be proposed to the Type Certification Board, through the Program Manager (PM), at any time during the process prior to final type certification. The issue paper format and instructions are provided in detail in appendix 1. Draft issue papers will be developed by the project team members for each significant issue as early in the program as practicable.

(1) Ideally, issue papers should initially be proposed at the preliminary Type Board meeting and the 'STATEMENT OF ISSUE' section of the issue paper should be developed. However, the major emphasis at Stage 1 of each issue paper should be to raise the issue to the FAA's and applicant's attention as early as practicable providing a concise 'STATEMENT OF ISSUE' language that is clearly understood by all parties concerned with resolution. (Before releasing an issue paper at Stage 1 the 'BACKGROUND' information should also be presented).

(2) Overall, the first priority should be placed on the identification, rather than the resolution, of significant issues. It is not expected that all significant issues will be identified or resolved prior to the type certification meeting. Quite often identification of issue papers does not occur until the significant features of the type design are discovered later on in the certification process. These issue papers are generally issued at Stage 2, which includes the 'FAA POSITION' statement. Issue papers should be developed, revised and concluded as a concerted effort between the FAA, ECAA (if applicable), and the applicant.

(3) If the applicant has been made aware of the need for an issue paper, it is recommended that the issue paper first introduced to the applicant also contain the 'FAA POSITION' statement that will be initially released at Stage 2. However, if the timing, controversial aspects and/or the nature of the issue require immediate and formal notification of the issue, the issue paper should be released at Stage 1.

(4) It is expected that the bulk of the type certification work will be accomplished through ongoing technical assessment activities by the project team members and other technical participants outside the framework of formal Type Certification Board meetings. Progress on all items will be documented by normal entries in the official type certification project file. Progress on significant issues will also be indicated by updating existing issue papers or, if new significant issues are raised, by developing new issue papers.

> **NOTE:** Issue papers are considered "draft issue papers" until such time as they are coordinated through the appropriate Type Certification Board members and their initials appear on the Board Coordination Grid.

(5) Project officers are expected to keep the applicable technical specialists within other ACOs and the accountable directorate, and the Chief Scientific and Technical Advisor when needed, fully apprised of the technical issues encountered throughout the evaluation process. Accountable directorate assistance in formulating the 'FAA POSITION' and 'CONCLUSION', depending on the stage, should be obtained before the issue paper is submitted to the project team members for coordination. The primary purpose of the accountable directorate review is to insure standardization of the issue paper through comparison with similar issue papers from other projects and to provide current policy related to the significant issue.

(6) All new or revised issue papers will be coordinated with the applicant and the project team members. If coordination can be effected with both the applicant and project team

members without impasse, the issue paper(s) can be closed by revision of the issue paper without holding a formal Type Certification Board meeting.

(7) Prior to completing the 'CONCLUSION' of the issue paper, every effort should be made to obtain agreement with the applicant on the issue paper's final requirements to be stated in the 'CONCLUSION.' If further discussions require the applicant to revise their position, the issue paper should be revised accordingly and the conclusion subsequently developed.

(8) Approval by the accountable directorate of the 'CONCLUSION' statement constitutes definition of the FAA requirement. The issue paper may be transmitted to the applicant directly or through the ECAA for foreign projects. Further discussions, correspondence, or appeals should focus on new information or proposals. Responses to such efforts should refer to the current stage and date of the issue paper, and indicate whether the new effort is considered to provide new information warranting a reconsideration and revision to the issue paper, or whether the issue paper conclusion stands as written.

(9) Draft copies of issue papers should not be transmitted to the applicant or ECAA (if applicable) unless assistance in development of the issue paper is needed. For example, assistance by the applicant may be requested to confirm the technical correctness of the Background section. Also, it may be necessary for the applicant to review the Applicant's Position as written in the issue paper to determine if the applicant's position was conveyed properly. If it is unavoidable to send a draft issue paper it must be clearly indicated that the issue paper is a draft and subject to change until final signature by the accountable directorate.

b. ISSUE PAPERS WILL NOT BE CONSIDERED A PART OF THE OFFICIAL FINAL TYPE CERTIFICATION PROJECT FILE. It is therefore necessary for the author of an issue paper to ensure that all final conclusions and important background information stated on the final stage of the issue paper are also contained in the official type certification project file in the form of meeting records, telecon records, correspondence with the applicant, issued Special Conditions and/or exemptions, Type Inspection Authorization or Type Inspection Report statements, TCDS notes, etc. Conversely, the author of an issue paper may make reference to official type certification project file documents in the body of the issue paper to reduce the number of details that might distract from the overview purpose of the paper.

c. For the reasons stated in (b) above, issue papers will be considered documents prepared by government employees for use in effecting project management containing opinions, advice, deliberations and recommendations made in the course of developing official action by the government. Issue papers WILL NOT be considered part of the official action, therefore, issue papers will be considered as draft material to be exempt from public disclosure to the fullest extent possible under the Freedom of Information Act (FOIA), Section 552(b)(5) as implemented by Department of Transportation regulations, Part 7, Section 7.71 (49 CFR 7.71).

d. The initial publication of the Issues Book will be the principal product of the initial Type Certification Board meeting.

1-4. The Issues Book.

a. Issue papers should be assembled and published in the form of an Issues Book by the program manager. The book will also provide a Table of Contents, Introduction, and identification of the project team members. Distribution will be made to the Type Certification Board members, project team members, the applicant, and the accountable and geographic Aircraft Certification directorate. An electronic version will simplify the ability to make the Issues Book available.

b. Updating will occur on an "as needed" basis, by revisions, as individual issue papers are advanced in stages. The program manager will distribute revised issue papers drafted by the project team members, circulate them electronically for coordination and, together with revised Table of Contents pages, make the updated Issues Book available.

c. The Issues Book will be revised to add new issue papers or update existing issue papers without holding a formal Type Certification Board meeting, provided the new or updated issue papers can be cleared through the applicant and project team by routine coordination.

d. Following the issuance of the type certificate, the issue book should be used as the basis for preparing a Certification Summary Report, if one is to be required by the accountable Directorate. The Certification Summary Report serves as a single source document that summarizes the record of the FAA examination of the type design which is the basis for issuance of the type certificate under §21.21. Preparing a Certification Summary Report allows the FAA to classify issue papers as non-releasable under the FOIA.

1-5. Technical Assessment Activities and Follow-on Type Certification Board Meetings.

a. It is expected that the bulk of the type certification work will be accomplished through ongoing technical assessment activities by the project team members and other technical participants outside the framework of formal Type Certification Board meetings. Progress on all items will be documented by normal entries in the official type certification project file. Progress on significant issues will also be indicated by updating existing issue papers or, if new significant issues are raised, by developing new issue papers.

b. After the initial Type Certification Board meeting, new or updated draft issue papers will be coordinated with the applicant and the Type Certification Board members. If coordination can be effected with both the applicant and Type Certification Board members without impasse, the issue papers will be placed in the Issues Book by revision without holding a formal Type Certification Board meeting.

c. Participant (Type Certification Board member or applicant) coordination on a new or updated issue paper means only that the participant understands all statements and agrees that the "branch action" involvement is correct and resolution status is accurately reflected by the paper.

d. Individual project team members are expected to keep their counterparts fully apprised of the technical issues encountered throughout the evaluation process whether or not these issues result in "issue papers." Accountable directorate assistance in formulating the "FAA position" and "conclusion" should be obtained before the issue paper is submitted to the Type Certification Board members for coordination. Accountable directorate concurrence with an issue paper will be indicated by the project officer's initials and date being inserted in the coordination grid by the project manager after telephonic or written authorization.

1-6. Impasse.

a. If an impasse is reached between Type Certification Board members, the ACO manager shall resolve it after considering the views of all affected parties and the accountable directorate's recommendations. However, the project-accountable directorate can remove from the ACO the signature authority for any project, at any time, if a project's progress is inconsistent with procedure or technical policy. In any case, the resulting decision becomes the basis for the FAA position in the issue paper.

b. The issue paper's conclusion shall result from Type Certification Board action. A formal Interim Type Certification Board meeting may be called by the Type Certification Board Chairman to hear conflicting views and to resolve the issue. A request for a formal Type Certification Board meeting may be made by either a Type Certification Board member or the applicant. If the Chairman agrees a formal Type Certification Board meeting is necessary, an agenda will be developed and discussions limited to the agenda items, to assure that all participants have an opportunity to be fully prepared and adequately represented. Interim Type Certification Board meetings should be scheduled to group together a number of agenda items unless resolution of a major issue is essential to avoid an unacceptable delay in the project.

c. Most issues should be capable of resolution informally, by coordination of issue papers among the Type Certification Board members without a meeting.

d. Acceptance of the conclusion stated in an issue paper by the Type Certification Board Chairman after receiving concurrence by the accountable directorate constitutes definition of the FAA requirement. Further discussions, correspondence, or appeals should focus on new information or proposals. Responses to such efforts should refer to the current stage of the issue paper, and indicate whether the new effort is considered to provide new information warranting a reconsideration and revision to the issue paper, or whether the issue paper conclusion stands as written.

1-7. Issue Paper Format. The issue paper format is described in appendix 1. A sample issue paper illustrating the evolution through several stages appears as appendix 2.

APPENDIX 1. ISSUE PAPER FORMAT/TEMPLATE

1-1. PURPOSE: The format to be used in drafting issue papers is shown by figure 2. Instructions for completing the issue paper format are provided below, using the same item numbers as indicated on figure 2.

a. The coordination grid is included as figure 1. The complete coordination grid will be inserted as the first sheet of the issue paper. Sign-off of the coordination grid for non-management signatures will be performed by the program manager as the routing of the issue paper will be done electronically. The completed coordination grid sheet should not be forwarded to the applicant as part of the issue paper.

> **NOTE:** The coordination grid will be used to obtain the management initials whereas the contact list will only contain the initials of the FAA program manager, project officer, and the originator. In some cases the contact list will also contain the initials of the technical specialist.

b. The format and coordination grid presented in this section could be used for all certification projects. Contact the applicable project officer if the issue paper template or coordination grid is not available to you.

(1) Project: Project, model designation, and project number or identifier.

Example: Acme Aircraft Company

Model AC-850

Project No. XXXXNW-D or S

(2) REG. REF: List relevant regulation(s), including any Special Condition(s) issued on the model.

Examples: 14 CFR §25.1309; or §§25.1309, 25.1453,….; or

Special Condition P-3 (25-78-NW-55/Aircraft Model)

The following related information shall be shown, as appropriate:

(a) If a Special Condition has been, or will be, proposed.

Example: 14 CFR §29.1318
Special Condition Proposed

(b) If an exemption petition has been filed by the applicant.

Example: 14 CFR §27.954
Exemption Petition Pending (Granted or Denied)

(c) If an equivalent safety finding is an issue.

Example: 14 CFR §23.789
Equivalent Safety Finding Requested (Granted or Denied)

(3) List national policy documents relevant to the issue, such as Advisory Circulars, National Directives, precedent-setting Special Conditions issued for a similar situation, or policy letters.

Examples: Advisory Circular 20-XX;

Order 8110.XX;

Action Notice A8110.XX

Special Condition 23-ACE-XX/Aircraft Model

If there are no known established national policy statements on the issue, state "None."

(4) SUBJECT: Identify the issue by a short, concise, descriptive subject title.

Example: Predictive Windshear System, or

Unwanted Automatic Thrust Lever Movement

(5) ITEM: Alphanumeric issue identifier, e.g., G-1, A-2, P-5, etc.

(a) The first digit is an alphabetic identification of the technical area - of prime concern using:

G - General

A - Airframe

S - Systems and Equipment

P - Propulsion

E - External Environmental Threats (Lightning, HIRF, etc.)

N - Noise

F - Flight Test

C - Crashworthiness/Interiors

Q - Quality assurance or article conformity

O - Operational

M - Maintenance

(b) The second character is a number indicating the sequential number of the issue paper. When performing an amended TC project it is suggested that the sequence of issue papers for the derivative model start with next available number from the baseline project. The General, G series issue papers, do not follow the typical numbering convention for the second character. For example, the certification basis will always be identified as G-1.

(6) STAGE: The stage, plus the date, indicates the level of development and content of the issue paper:

Stage 1 - Indicates that the 'STATEMENT OF ISSUE' has been defined and that corollary discussion and 'BACKGROUND' information has been included.

Stage 2 - Indicates that the 'FAA POSITION' has been defined.

Stage 3 - Incorporates the 'APPLICANT'S POSITION' and/or 'ECAA POSITION,' if applicable. May also include a revised FAA position.

Stage 4 - Includes the 'CONCLUSION' of the issue.

(a) Issue papers need not always start with Stage 1**.** Most issue papers will start as Stage 2 with the 'FAA POSITION' defined. Should the applicant's position be available and be included in the initial release of an issue paper, the issue paper should be identified as Stage 3. In this case a note at the end of the applicants position should be included that identifies that the applicant has not formally seen the FAA's position and that a response is required before the issue paper can be closed.

(b) Each stage of the issue paper may have more than one revision, which is tracked by the stage and date. For example, if the FAA's position needs to be modified for clarity based on the information contained in the 'APPLICANT'S POSITION', an additional FAA statement should be made during development of Stage 3. The modified FAA position will be titled as "FAA POSITION" (dated Month, Day, and Year) while keeping the original 'FAA POSITION' statement intact. The corresponding revised Applicant's Position, if required, will be incorporated in the same fashion including the date of the subsequent 'APPLICANT POSITION' statement. This process should be followed for minor changes to the issue paper.

(c) If one party to a controversy significantly changes its position, only the most current position statement should be retained to avoid confusion. The record of earlier abandoned arguments or positions which have no remaining relevance to the resolution should not be maintained.

(7) DATE: The date, along with the stage, indicates the revision status of the issue paper. Following incorporation of proposed changes, the originator will insert the date reflecting the latest revision. The Stage and date of an issue paper define the revision level of an issue paper. Minor variances in the FAA requirements for which the applicant would have no response can also be documented in the 'CONCLUSION' statement. When revising an issue paper without changing the stage it is important to document why the issue has been revised.

(8) ISSUE STATUS: The Issue Status block indicates the current resolution status of the issue, i.e., "OPEN", "CLOSED" or "REOPEN." The issue status shall indicate "CLOSED" after agreement has been reached between the FAA and Applicant regarding resolution of the issue. In the event that agreement is not reached, the issue paper may be closed when the FAA reaches a final conclusion. If the issue paper has been closed and circumstances warrant reopening the issue paper then the Issue Status block should indicate "REOPEN." When a Special Condition has been proposed, the issue paper status will remain "OPEN" until an NPRM has been published in the Federal Register or until the pending action has been withdrawn. The issue paper may be closed by referencing the date of the Federal Register and page numbers of the publications.

NOTE: The "ISSUE STATUS" does not indicate compliance status.

(9) BRANCH ACTION: When an issue paper is first presented to the TC Board, each Branch that believes it should be involved in the resolution of the issue will be identified under this item. Thus, the code 120/140/270, for example, would indicate a need to coordinate the proposed means of resolution with the Airframe (AXX-120) and Propulsion (AXX-140) Branches in the Aircraft Certification Office and the Aircraft Evaluation Group (AXX-XXX) in the Flight Standards Division. Type Certification Board grid coordination need only include the involved branches specified in the "Branch Action," the accountable directorate, and the Chairman.

(10) COMPLIANCE TARGET: The compliance target (e.g. Pre-TC, Pre-TIA, Pre-STC, etc.) indicates the milestone when the applicant must have completed the required tasks and have the data submitted and approved in order to demonstrate compliance to the applicable requirements.

(11) ISSUE PAPER "Subheader" indicates the type of issue paper. One of the following titles should be inserted into this area: "Means of Compliance", "Equivalent Safety Finding", " Proposed Special Condition", "Certification Basis", "Determination of Compliance", "Environmental Conditions" or "Import (Export) Requirements." If none of the previous titles adequately describe the type of issue paper the title in the subheader may state "Issue Paper."

(12) The 'STATEMENT OF ISSUE' should be a clear and concise statement that is easily understood by all concerned parties. <u>It must identify and summarize the significant or contentious issue and state why the issue paper is needed</u>. The language in the 'STATEMENT OF ISSUE' should be factual and not carry inflammatory references.

(a) Example: "The airplane design has exits located relatively close to the engine inlets. Safe slide operation and passenger evacuation may be adversely affected during emergency deployment of escape slides/rafts with engines operating. The current regulations do not address this situation."

(b) If the issue paper is based on a generic issue paper, the Statement of Issue should identify that the issue paper was "developed from a generic issue paper."

(13) BACKGROUND: The 'BACKGROUND' section should be as detailed as necessary to document the issue and to develop both sides of the issue, however, every effort should be made to keep it as concise as possible without compromising understanding for resolution. Reference to letters or other documents is encouraged to cover details. At each subsequent revision or stage, this section should be sufficiently complete so that reference to previous stages/revisions is not necessary to understand the status of resolution.

(14) FAA POSITION: The 'FAA POSITION' should indicate the FAA's concerns, opinions and what the applicant will be required to accomplish in order to resolve the issue. The applicant should be given direction that will enable compliance to the requirements without dictating design.

(15) ECAA POSITION: The ECAA's position, (if applicable), should be incorporated into this section verbatim if possible.

(16) APPLICANT POSITION: The FAA should incorporate the applicant's statements, usually verbatim when submitted in writing. If the Applicant's Position is submitted in writing the letter number and date should be referenced at the beginning of the section. If the applicant does not elect to provide a statement for inclusion in the issue paper, a statement to that effect should be included.

(17) PAGE: Identifies the page numbers of the issue paper. The first page and coordination grid does not have page numbers. If an issue paper has more than one page, the succeeding pages should be numbered and identified as follows: (Upper right-hand corner, 7 spaces down, 12 spaces in):

Example: Page 2 of Item G-l

Project No. CTXXXNW-D

(18) CONCLUSION: The 'CONCLUSION' statement shall document the resolution of the issue. If agreement cannot be reached the FAA may write its final conclusion. The 'CONCLUSION' statement should be developed only after the applicant and ECAA, as applicable, has had opportunity to comment on the entire FAA position or any revisions to the FAA position.

The ‘CONCLUSION’ statement should contain the final requirements required of the applicant. For Bilateral Certification projects the conclusion should also state the requirements for the ECAA and whether or not the ECAA is to find compliance to the requirements of the issue paper.

It is not necessary to restate the FAA position if the requirements in the ‘FAA POSITION’ section have not changed. A reference to the requirements contained in the ‘FAA POSITION’ in this case will suffice.

The wording of a “Proposed Special Condition” will be provided as the tentative conclusion until the Notice of Special Condition is issued in the Federal Register. If the Special Condition has been issued on another project, the EXACT words should be repeated here. The NPRM docket number should be referenced in this paragraph when it is available.

(19) The signature line (and date) should be the office title only (NO name) and a date should be entered. The signed date should correspond to the date of the issue paper when the issue paper is closed.

(20) CONTACTS: Contacts should be the originator (technical specialist), the project manager and project officer, as applicable.

(21) FILE NAME: The file name should indicate the current file name of the document.

FIGURE 1. ISSUE PAPER COORDINATION GRID

DO NOT REMOVE FROM ISSUE PAPERS (ATTACHED)

ISSUE PAPER

COORDINATION GRID

APPLICANT NAME:_____

MODEL:_____PROJECT NO._____

ISSUE PAPER NUMBER:_____STAGE_____DATE_____

SUBJECT:_____

PROJECT/PROGRAM MANAGER:_____

SPECIALISTS

ACO/Accountable Directorate						
Branch/Org Name						
Initials Date						

SPECIALISTS

ACO/ Accountable Directorate						
Branch/Org Name						
Initials Date						

ACO BRANCH MANAGEMENT

Branch/Org Name						
Initials Date						

ACCOUNTABLE DIRECTORATE STANDARDS STAFF MANAGEMENT

	111	**112**	**113**	**114**	**1XX**	**110**
Branch/Org Name						
Initials Date						

FIGURE 2. ISSUE PAPER FORMAT

ISSUE PAPER

PROJECT: (1)

ITEM: (5)

STAGE: (6)

REG.REF.: §§(2)

DATE: (7)

NATIONAL

ISSUE STATUS: (8)

POLICY REF.: (3)

SUBJECT: (4)

BRANCH ACTION: (9)

COMPLIANCE

TARGET: (10)

(11)

STATEMENT OF ISSUE: (12)

BACKGROUND: (13)

FAA POSITION: (14)

ECAA POSITION: (15)

APPLICANT POSITION: (16)

(*Header information)*

- -

PROJECT: (**1**) ITEM: (**5**)

STAGE: (**6**)

DATE: (**7**)

PAGE : (**17**)

- -- -

CONCLUSION: (**18**)

(**19**)

Accountable Directorate Date

Aircraft Certification Service

CONTACTS:

(**20**)

TITLE	NAME	PHONE
Originator		
Project Officer		
Project Manager		

FILE NAME: (**21**)

APPENDIX 2. SAMPLE ISSUE PAPER

ISSUE PAPER

PROJECT: GENERIC AIRPLANE COMPANY

Model XYZ

ITEM: (5)

STAGE: (6)

REG.REF.: §§25.865

DATE: (7)

NATIONAL

ISSUE STATUS: Open

POLICY REF.: AC 20-135, Aviation Safety Release No. 415

SUBJECT: Fire Protection of Structure and Systems in Fire Zones

BRANCH ACTION: Airframe

COMPLIANCE

TARGET: Pre-TIA

STATEMENT OF ISSUE:

Engine mounts, flight controls, and other flight structure in, or adjacent to, designated fire zones must be fireproof or shielded so that they are capable of withstanding the effects of fire. Fireproof is defined in Part 1 as "equivalent to steel." The engine mount structures on the Generic model airplanes are made of titanium which may not be equivalent to steel in terms of load carrying capability at elevated temperatures. In addition some structural components are composed of elastomerics.

BACKGROUND:

Section 25.865 was added to Part 25 by amendment 23 in 1970, although the same requirement had already existed for rotorcraft for many years. Aviation safety release No. 415 dated November 9, 1961, states that the component must sustain the loads and perform the function for which it was designed when subjected to a test flame of 2000 degrees for 15 minutes. This document formed the basis of the current advisory material for transport and utility helicopters (AC 29-2, Certification of Transport Category Rotorcraft, and AC 27-1, Certification of Normal Category Rotorcraft) and has also been used for transport category airplane certification.

Although the Advisory Circular AC 20-135, Powerplant Installation and Propulsion System Component Fire Protection Test Methods, Standards and Criteria, contains fire protection criteria for powerplants it does not contain any means of compliance with 14 CFR §25.865. Past programs have generally relied on the criteria in Aviation Safety Release No. 415 although the criteria stated therein are general and subject to varied interpretations. The certification program for the Generic model XYZ was delayed over controversy concerning the means of compliance with §25.865. The following FAA position is developed from the criteria provided in AC 29-2 for transport category rotorcraft with some modifications appropriate to transport airplanes.

FAA POSITION:

The titanium and elastomeric structures must be able to sustain the appropriate loads with a positive margin of safety for any foreseeable powerplant fire condition. A test should be performed in which the structures are subjected to a test flame of 2000 ± 50 degrees for a period of 15 minutes. The heat flux should be as described in AC 20-135 and loads appropriate to the fire condition should be imposed during the test.

In the absence of a more rational determination of the expected flight loads, the structure should be able to support limit flight loads without failure for at least five minutes. After 5 minutes and until the end of 15 minutes, the engine may be assumed to be shut down and structure must be able to support the discrete source damage loads described in AC 25.571-1A, Damage Tolerance and Fatigue Evaluation of Structure. Freedom from flutter and whirlmode should also established.

The failsafe features of the design may be taken into account if it can be shown that a foreseeable fire conditions could not affect the integrity of the alternate load paths.

Validated analyses may be used to represent the transient temperature conditions and strength under the applied loads.

ECAA POSITION:

APPLICANT POSITION:

CONCLUSION:

_____ _____

Transport Airplane Directorate Date

Aircraft Certification Service

CONTACTS:

TITLE	NAME	INITIALS DATE	PHONE
Originator:			
Project Manager:			
Project Officer:			
Tech. Specialist:			

Filename: