DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 91, 121, 125, and 129

[Docket No. 29104; Notice No. 97–16]

RIN 2120–AF81

Repair Assessment for Pressurized Fuselages

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This proposed rulemaking would require incorporation of repair assessment guidelines for the fuselage pressure boundary (fuselage skins and pressure webs) of certain transport category airplane models into the FAA-approved maintenance or inspection program of each operator of those airplanes. This action is the result of concern for the continued operational safety of airplanes that are approaching or have exceeded their design service goal. The purpose of the repair assessment guidelines is to establish a damage-tolerance based supplemental inspection program for repairs to detect damage, which may develop in a repaired area, before that damage degrades the load carrying capability of the structure below the levels required by the applicable airworthiness standards.

DATES: Comments must be submitted on or before April 2, 1998.

ADDRESSES: Comments on this document may be mailed in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC–200), Docket No. 29104, 800 Independence Avenue SW., Washington, DC 20591; or delivered in triplicate to: Room 915G, 800 Independence Avenue SW., Washington, DC 20591. Comments delivered must be marked Docket No. 29104. Comments may also be submitted electronically to: 9–NPRM–CMTS@faa.dot.gov. Comments may be examined in Room 915G weekdays, except Federal holidays, between 8:30 a.m. and 5:00 p.m. In addition, the FAA is maintaining an information docket of comments in the Transport Airplane Directorate (ANM–100), Federal Aviation Administration, Northwest Mountain Region, 1601 Lind Avenue SW., Renton, WA 98055–4056. Comments in the information docket may be examined weekdays, except Federal holidays, between 7:30 a.m. and 4:00 p.m.

FOR FURTHER INFORMATION CONTACT: Dorenda Baker, Manager, Aging Aircraft Program, ANM–109, FAA Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, WA 98055–4056; telephone (425) 227–2109, facsimile (425) 227–1100.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adoption of the proposals in this notice are also invited. Substantive comments should also be accompanied by cost estimates. Commenters should identify the regulatory docket or notice number and submit comments in triplicate to the Rules Docket address specified above. All comments received on or before the closing date for comments will be considered by the Administrator before taking action on this proposed rulemaking. The proposals contained in this notice may be changed in light of the comments received. All comments received will be available in the Rules Docket for examination by interested persons, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. 29104. The postcard will be date stamped and returned to the commenter.

Availability of the NPRM

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339), the online **Federal Register** database through GPO Access (telephone: 202–512–1661), or the FAA's Aviation Rulemaking Advisory Committee Bulletin Board service (telephone: 202–267–5948).

Internet users may reach the FAA's web page at http://www.faa.gov or GPO's **Federal Register** web page at http://www.access.gpo.gov/su__docs for access to recently published rulemaking documents.

Any person may obtain a copy of this NPRM by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue SW., Washington, D.C. 20591, or by calling (202) 267–9677. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future rulemaking documents should request from the Office of Public Affairs, Attention: Public Inquiry Center, APA–230, 800 Independence Ave SW., Washington, D.C. 20591, or by calling (202) 267–3484, a copy of Advisory Circular No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

Background

This proposal, to require the incorporation of repair assessment guidelines into the maintenance or inspection program for certain transport category airplanes, follows from commitments made by the FAA and the aviation community in June 1988 to address the issues concerning the safety of aging transport airplanes.

In April 1988, a high-cycle transport airplane enroute from Hilo to Honolulu, Hawaii, suffered major structural damage to its pressurized fuselage during flight. This accident was attributed in part to the age of the airplane involved. The economic benefit of operating certain older technology airplanes has resulted in the operation of many such airplanes beyond their previously projected retirement age. Because of the problems revealed by the accident in Hawaii and the continued operation of older airplanes, both the FAA and industry generally agreed that increased attention needed to be focused on the aging fleet and on maintaining its continued operational safety.

In June 1988, the FAA sponsored a conference on aging airplanes. As a result of that conference, an aging aircraft task force was established in August 1988 as a sub-group of the FAA's Research, Engineering, and Development Advisory Committee, representing the interests of the aircraft operators, aircraft manufacturers, regulatory authorities, and other aviation representatives. The task force, then known as the Airworthiness Assurance Task Force (AATF), set forth five major elements of a program for keeping the aging fleet safe. For each airplane model in the aging transport fleet, (1) select service bulletins describing modifications and inspections necessary to maintain structural integrity; (2) develop inspection and prevention programs to address corrosion; (3) develop generic structural maintenance program guidelines for aging airplanes; (4) review and update the Supplemental Structural Inspection Documents (SSID) which describe inspection programs to detect fatigue cracking; and (5) assess damage-tolerance of structural repairs. Structures Task Groups sponsored by the Task Force were assigned the task of developing these elements into usable programs.

Today the Task Force, which has been reestablished as the Airworthiness Assurance Working Group (AAWG) of the Aviation Rulemaking Advisory Committee (ARAC), has completed its work on the first four elements. This proposed rulemaking addresses the fifth element, the assessment of repair damage tolerance.

Related Regulatory Activity

In addition to the initiatives previously discussed, there are other activities associated with FAA's Aging Aircraft Program. These include FAA's response to the Aging Aircraft Safety Act and future rulemaking to mandate corrosion prevention and control programs for all airplanes used in air transportation.

The Aging Aircraft Safety Act of 1991 (Pub. L. 49 U.S.C. 44717) instructed the Administrator to prescribe regulations that ensure the continuing airworthiness of aging aircraft through inspections and reviews of the maintenance records of each aircraft an air carrier uses in air transportation. In response to the Act, the FAA published notice 93–14 on October 5, 1993 (58 FR 51944). The FAA has reviewed the public comments to that Notice and anticipates regulatory action in the near future based on those comments and other considerations.

In addition, the FAA has found that some operators do not have a programmatic approach to corrosion prevention and control programs (CPCP). In its accident investigation report (NTSB/AAR–89/03) on the Aloha accident, the NTSB recommended that the FAA mandate a comprehensive and systematic CPCP. Therefore, the FAA is considering rulemaking to mandate CPCPS for all airplanes used in air transportation. As part of that deliberation, the FAA is considering the corrosion prevention and control programs recommended by the AATF and adopted by the FAA through Airworthiness Directives (ADs); those ADs affect all of the airplanes affected by this proposal.

The Aviation Rulemaking Advisory Committee

The ARAC was formally established by the FAA on January 22, 1991 (56 FR 2190), to provide advice and recommendations concerning the full range of the FAA's safety-related rulemaking activity. This advice was sought to develop better rules in less overall time using fewer FAA resources than are currently needed. The committee provides the opportunity for the FAA to obtain firsthand information and insight from interested parties regarding proposed new rules or revisions of existing rules.

There are over 60 member organizations on the committee, representing a wide range of interests within the aviation community. Meetings of the committee are open to the public, except as authorized by section 10(d) of the Federal Advisory Committee Act.

The ARAC establishes working groups to develop proposals to recommend to the FAA for resolving specific issues. Tasks assigned to working groups are published in the **Federal Register**. Although working group meetings are not generally open to the public, all interested parties are invited to participate as working group members. Working groups report directly to the ARAC, and the ARAC must concur with a working group proposal before that proposal can be presented to the FAA as an advisory committee recommendation.

The activities of the ARAC will not, however, circumvent the public rulemaking procedures. After an ARAC recommendation is received and found acceptable by the FAA, the agency proceeds with the normal public rulemaking procedures. Any ARAC participation in a rulemaking package will be fully disclosed in the public docket.

By **Federal Register** notice dated November 30, 1992 (57 FR 56627), the AATF was placed under the auspices of the Aviation Rulemaking Advisory Committee (ARAC) and renamed as the Airworthiness Assurance Working Group. One of the specific tasks assigned to the AAWG was to develop recommendations concerning whether new or revised requirements and compliance methods for structural repair assessments of existing repairs should be initiated and mandated for the Airbus A300; BAC 1–11; Boeing 707/720, 727, 737, 747; Douglas DC–8, DC–9/MD–80, DC–10; Fokker F–28; and Lockheed L–1011 airplanes.

The Concern Posed By Older Repairs

The basic structure of each of the large jet transports that would be affected by this proposed rule was required at the time of original certification to meet the applicable regulatory standards for fatigue or fail-safe strength. Repairs and modifications to this structure were also required to meet these same standards.

These early fatigue or fail-safe requirements did not provide for timely inspection of critical structure so that damaged or failed components could be dependably identified and repaired or replaced before a hazardous condition developed. In 1978 a new certification requirement called damage tolerance was introduced to assure the continued structural integrity of transport category airplanes certificated after that time. This concept was adopted as an amendment to § 25.571 by Amendment 25–45 (43 FR 46242), and for existing designs, guidance material based on this rule was published in 1981 as Advisory Circular (AC) 91–56, Supplemental Structural Inspection Program for Large Transport Category Airplanes.

Damage tolerance is a structural design and inspection methodology used to maintain safety considering the possibility of metal fatigue or other structural damage (i.e., safety is maintained by adequate structural inspection until the damage is repaired). The underlying principle for damage tolerance is that the initiation and growth of structural fatigue damage can be anticipated with sufficient precision to allow inspection programs to safely detect damage before it reaches a critical size. A damage-tolerance evaluation entails the prediction of sites where fatigue cracks are most likely to initiate in the airplane structure, the prediction of the crack trajectories and rates of growth under repeated airplane structural loading, the prediction of the size of the damage at which strength limits are exceeded, and an analysis of the potential opportunities for inspection of the damage as it progresses. This information is used to establish an inspection program for the structure that, if rigorously followed, will be able to detect cracking that may develop before it precipitates a major structural failure. A damage-tolerant structure is one in which damage would be detected by reliance on normally performed maintenance and inspection actions long before it becomes hazardous.

The evidence to date is that when all critical structure is included, the damage-tolerant concept, and the supplemental inspection programs that are based on it, provide the best assurance of continued structural integrity that is currently available. In order to apply this concept to existing transport airplanes, beginning in 1984, the FAA issued a series of Airworthiness Directives (AD's) requiring compliance with the first supplemental inspection programs resulting from application of this concept to existing airplanes. Nearly all of the airplane models affected by this proposed rule are now covered by such AD's. Generally, these AD's require that operators incorporate Supplemental Structural Inspection Documents (SSID's) into their maintenance programs for the affected airplanes. These documents were derived from damage-tolerance assessments of the originally certificated type designs for these airplanes. For this reason, the majority of AD's written for the SID program did not attempt to address issues relating to the damage tolerance of repairs that had been made to the airplanes. The objective of this proposed rule is to provide that same level of assurance for areas of the structure that have been repaired.

Repairs are a concern on older airplanes because of the possibility that they may develop, cause, or obscure metal fatigue, corrosion, or other damage during service. This damage might occur within the repair itself or in the adjacent structure and might ultimately lead to structural failure. The damage-tolerance evaluation of a repair would be used in an assessment program to establish an appropriate inspection program, or a replacement schedule if the necessary inspection program is too demanding or not possible. The objective of the repair assessment is to assure the continued structural integrity of the repaired and adjacent structure based on damage-tolerance principles.

In general, repairs present a more challenging problem to solve than the original structure because they are unique and tailored in design to correct particular damage to the original structure. Whereas the performance of the original structure may be predicted from tests and from experience on other airplanes in service, the behavior of a repair and its effect on the fatigue characteristics of the original structure are generally not known to the same extent as for the basic unrepaired structure.

The available service record and surveys of out-of-service and in-service airplanes have indicted that existing repairs perform well. Although the cause of an airplane accident has never been attributed to properly applied repairs using the original repair data, repairs may be of concern as time-in-service increases for the following reasons:

1. As airplanes age, both the number and age of the existing repairs increase. Along with this increase in the number of and age of repairs is the possibility of unforeseen repair interaction, autogenous failure, or other damage occurring in the repaired area. The continued operational safety of these airplanes depends primarily on a satisfactory maintenance program (inspections conducted at the right time, in the right place, using the most appropriate technique). To develop this program, a damage tolerance evaluation of repairs to flight-critical structure is essential. The longer an airplane is in service, the more important this evaluation and a subsequent inspection program become.

2. The practice of damage-tolerance methodology has evolved gradually over the last 20 plus years. Some repairs described in the airplane manufacturers' Structural Repair Manuals (SRMs) were not designed to current standards. Repairs accomplished in accordance with the information contained in the early versions of the SRMs may require additional inspections if evaluated using the current methodology.

3. Because a regulatory requirement for damage tolerance was not applied to airplane designs type certificated before 1978, the damage-tolerance characteristics of repairs may vary widely and are largely unknown.

Development of Recommendation

To address the ARAC assignment on repairs, the AAWG tasked the manufacturers to develop repair assessment guidelines requiring specific maintenance programs to maintain the damage-tolerance integrity of the basic airframe. The following criteria were developed to assist the manufacturers in the development of that guidance material:

- Specific repair size limits for which no assessment is necessary should be selected for each model of airplane.
- Repairs that do not conform to SRM standards must be reviewed and may require further action.
- Repairs must be reviewed where the repair has been installed in accordance with SRM data that have been superseded or rendered inactive by new damage-tolerant designs.
- Repairs in close proximity to other repairs or modifications require review to determine their impact on the continued airworthiness of the airplane.
- Repairs that exhibit structural distress should be replaced before further flight.

To identify the scope of the overall program, fleet data were required. This resulted in the development of a five-step program to develop factual data for the development of the rule. The five-step AAWG program consisted of:

- Development of model specific repair assessment guidelines using AAWG repair criteria.
- Completion of a survey of a number of operators' airplanes to assess fuselage skin repairs, and to validate the approach of the manufacturer's repair assessment guidelines.
- Determination of the need for and the development of a world-wide survey.
- Collection and assessment of results to determine further necessary actions.
- Development of specific manufacturer/operator/FAA actions.

Early in the development of this task, each manufacturer began to prepare model specific repair assessment guidelines. When sufficiently developed, these draft guidelines were shared with the operators to get feedback on acceptability and suggestions for improvement. The operators stressed the need for commonality in approach and ease of use of the guidelines. They also expressed the need for guidelines that could be used on the shop floor without engineering assistance and without extensive training.

Meanwhile, the AAWG conducted two separate surveys of existing repairs on airplanes to collect necessary data. The first survey was conducted in March 1992 on certain large transport category airplanes being held in storage. Teams, comprised of engineering representatives from various organizations, including FAA's Aircraft Certification and Flight Standards offices, operators, and manufacturers, surveyed 356 external fuselage skin repairs on 30 airplanes of 6 types. Using repair classification criteria developed by the individual airplane manufacturers, the teams concluded that the general quality of the repairs appeared good. Forty percent of the repairs were adequate, requiring no supplemental inspections, and sixty percent needed a more comprehensive damage-tolerance based assessment, with the possibility that supplemental inspections might be needed. Some determining factors on the need for further assessment were the size of the repair and its proximity to other repairs. While the survey sample size was very small compared to the total population of transport airplanes type certificated prior to 1978, it provided objective information on the quality and damage-tolerance characteristics of existing airplane repairs.

In 1994, the AAWG requested that the manufacturers conduct a second survey on airplane repairs to validate the 1992 results and to provide additional information relative to the estimated cost of the assessment program. The manufacturers were requested to visit airlines operating their products and to conduct surveys on airplanes in heavy maintenance. An additional 35 airplanes were surveyed in which 695 repairs were evaluated. This survey was expanded to include all areas of the airframe. The evaluation revealed substantially similar results to the 1992 results in which forty percent of the repairs were classified as adequate, and sixty percent of the repairs required consideration for additional supplemental inspection during service. In addition, only a small number of repairs (less than 10 percent) were found on portions of the airframe other than the external fuselage skin.

The AAWG proposed that the repair assessment be initially limited to the fuselage pressure boundary (fuselage skins and bulkhead webs); if necessary, future rulemaking would address the remaining primary structure. This limitation is based on two considerations.

First, the fuselage is more sensitive to structural fatigue than other airplane structure because its normal operating loads are closer to its limit design loads. Stresses in a fuselage are primarily governed by the pressure relief valve settings of the environmental control system, and these are less variable from flight to flight than the gust or maneuver loads that typically determine the design stresses in other structure. Second, the fuselage is more prone to damage from ground service equipment than other structure and requires repair more often. The result of the second survey described above supports the conclusion that repairs to the fuselage are far more frequent than to any other structure.

This proposed rule would only apply to eleven large transport category airplane models. (In the original ARAC task, the 707 and 720 were counted as one model. This proposed rule addresses the 707 and 720 models separately due to their different flight cycle implementation times.) The reason for this limitation is that the original tasking to the ARAC limited the scope of the work to the eleven oldest models of large transport category airplanes then in regular service. This tasking identified those airplanes for which the greatest concern exists as to the status of primary structure repairs. Derivatives of the original airplanes models are covered to the extent that the structure has not been upgraded to meet damage tolerance requirements.

Those transport category airplanes that have been certificated to regulatory standards that include the requirements for damage tolerant structure under § 25.571 of 14 CFR part 25, as amended by Amendment 25–45, are not included. These later requirements make it incumbent on the operating certificate holder to return the structure to the original certification basis by installing only those repairs that meet the airplane's damage-tolerant certification basis. The AAWG, in its final report on this subject, did recommend continued monitoring of repairs on the newer airplanes, with the possibility of additional rulemaking if conditions warrant. (A copy of the AAWG's final report is included in the public docket for this rulemaking.)

As a result of the AAWG activities, the manufacturers have recognized the need for, and made a commitment to develop, for each affected airplane model, a repair assessment guidelines document and a Structural Repair Manual, updated to include the results of a damage-tolerance assessment. When referring to these documents and related actions in this proposed rule, the FAA is referring to actions the manufacturers have agreed to take.

It was also recognized by the AAWG that repair assessment guidelines would add to, or in some cases appear to be in conflict with, existing repair approval data. All repairs assessed under this proposed rule should have been previously approved by the FAA using an FAA-approved SRM, an FAA-approved Service Bulletin, or a repair scheme approved by an FAA Designated Engineering Representative or an SFAR 36 authorization holder. To avoid the appearance of conflicts between FAA approved data sources, the manufacturers have agreed to update the affected SRMs, as well as repairs identified in Service Bulletins, to determine requirements for supplemental inspections, if not already addressed.

Structural modifications and repairs mandated by Airworthiness Directives do not always contain instructions for future supplemental inspection requirements. The manufacturers have agreed to evaluate the need for post modification inspections for these mandated modifications and repairs. A list of Service Bulletins that are the subject of Airworthiness Directives will be contained in the model specific repair assessment guidelines, with required post modification/repair inspection programs as required. A list of other structural Service Bulletins will be provided in the model specific repair assessment guidelines with associated inspection thresholds and repeat intervals. The manufacturers have agreed to complete their review of Service Bulletin related skin repairs in conjunction with the initial SRM updates.

These agreements notwithstanding, there is still a possibility that the requirements in the repair assessment guidelines will not agree with that in an AD, especially if the AD was written to address a modification to the airplane made by someone other than the original manufacturer. Federal Aviation Regulations would require that compliance be shown with both the AD and this proposed rule. Such dual compliance can be avoided in the longer term by working with the manufacturer, if that is the source of difficulty, or by securing an Alternative Method of Compliance (AMOC) to the AD. In the short term, compliance with the earlier threshold, shorter repeat inspection interval or more stringent rework/replace schedule would always constitute compliance with the less stringent requirement. Thus, the operator would not be faced with an unresolvable conflict.

The AATF originally recommended that the use of repair assessment guidelines be mandated by Airworthiness Directive. The FAA concluded that an unsafe condition necessitating AD action had not been established for repairs, and this position is supported by both repair surveys. However, the FAA also considered, and the AAWG agreed, that the long term concern with repairs on older airplanes, as described earlier, does warrant regulatory action, and this proposed rule addresses that concern.

The AAWG also recognized that the concerns discussed above for the safety of existing repairs would also apply to the long-term safety of future repairs to these airplanes. Therefore, the AAWG considered that new repairs should also be subject to damage-tolerance assessments. It is expected that most new repairs will be installed in accordance with an FAA-approved SRM that has been updated to include this damage-tolerance assessment. However, in the event that a new repair is installed for which no such assessment has been made, or is available, the repair assessment guidelines prepared to meet the requirements of this proposal should be used. The intent of this proposed rule is that all repairs to the fuselage pressure boundary will be evaluated for damage-tolerance, and that any resulting inspection schedule will be specified and the work accomplished, regardless of when, or by whom the repair was installed.

Repair Assessment Guidelines

The next step in the AAWG's program for this task was to develop a repair assessment methodology that is effective in evaluating the continued airworthiness of existing repairs for the fuselage pressure boundary on affected transport category airplane models. Older airplane models may have many structural repairs, so the efficiency of the assessment procedure is an important consideration. In the past, evaluation of repairs for damage-tolerance would require direct assistance from the manufacturer. Considering that each repair design is different, that each airplane model is different, that each area of the airplane is subjected to a different loading environment, and that the number of engineers qualified to perform a damage-tolerance assessment is small, the size of an assessment task conducted in that way would be unmanageable. Therefore, a new approach was developed.

Since repair assessment results will depend on the model specific structure and loading environment, the manufacturers were tasked to create an assessment methodology for the types of repairs expected to be found on each affected airplane model. Since the records on most of these repairs are not readily available, locating the repairs will necessitate surveying the structure of each airplane. A survey form was created that may be used to record key repair design features needed to accomplish a repair assessment. Airline personnel not trained as damage-tolerance specialists can use the form to document the configuration of each observed repair.

Using the information from the survey form as input data, the manufacturers have developed simplified methods to determine the damage tolerance characteristics of the surveyed repairs. Although the repair assessments should be performed by well trained personnel familiar with the model specific repair assessment guidelines, these methods enable an engineer or technician, not trained as a damage-tolerance specialist, to perform the repair assessment without the assistance of the manufacturer.

From the information on the survey form, it is also possible to classify repairs into one of three categories:

Category A: A permanent repair for which the baseline zonal inspection (BZI), (typical maintenance inspection intervals assumed to be performed by most operators), is adequate to ensure continued airworthiness (inspectability) equal to the unrepaired surrounding structure.

Category B: A permanent repair that requires supplemental inspections to ensure continued airworthiness.

Category C: A temporary repair that will need to be rewarded or replaced prior to an established time limit. Supplemental inspections may be necessary to ensure continued airworthiness prior to this limit.

This methodology is being generated by the airplane manufacturers. Model specific repair assessment guidelines will be prepared by the manufacturers for the eleven aging airplane models. Uniformity and similarity of these repair assessment procedures between models is important to simplify operator workload. The manufacturers have spent considerable time over the last four years to achieve commonality of the repair assessment process. The inspection intervals contained in the FAA-approved model specific guidelines documents are based on residual strength, crack growth, and inspectability evaluations. The manufacturers are endeavoring to make the inspection methods and intervals compatible with typical operator maintenance practice. Thus, internal inspections would be acceptable at ''D-check'' intervals, or equivalent cycle limit, while simpler external inspections could be accommodated at multiple ''C-check'' intervals, or equivalent cycle limit. If the inspection method and intervals for a given repair are not compatible with the operator's maintenance schedule, the repair could be replaced with a more damage-tolerant repair.

The model specific repair assessment guidelines documents are scheduled to be published no later than July 1, 1997, and will require approval by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate. Once approved, this material can also be used for evaluating the damage-tolerance characteristics of new repairs for continued airworthiness.

In order to further facilitate the assessment process, the manufacturers have agreed to update model specific SRMs to reflect damage tolerance repair considerations. The goal is to complete these updates by the first revision cycle of the model specific SRM, after the release of the associated repair assessment guidelines document. Consistent with the result of the surveys, only fuselage pressure boundary repairs are under consideration in this proposal.

The general section of each SRM, Chapter 51, will contain brief descriptions of damage tolerance considerations, categories of repairs, description of baseline zonal inspections, and the repair assessment logic diagram. Chapter 53 of the SRM for pressurized fuselage skin will be updated to identify repair categories and related information.

In updating each SRM, existing location-specific repairs should be labeled with appropriate repair category identification (A, B, or C), and specific inspection requirements for B and C repairs should also be provided as applicable.

Structural Repair Manual descriptions of generic repairs will also contain repair category considerations regarding size, zone, and proximity. Detailed information for determination of inspection requirements will be provided in separate repair assessment guidelines documents for each model. Repairs which were installed in accordance with a once current SRM, but which have now been superseded by a new damage-tolerant design, will require review. Such superseded repairs may be reclassified to Category B or C, requiring additional inspections and/or rework.

Repair Assessment Process

There are two principle techniques that can be used to accomplish the repair assessment. The first technique involves a three stage procedure. This technique could be well suited for operators of small fleets. The second technique involves the incorporation of the repair assessment guidelines as part of an operator's routine maintenance program. This approach could be well suited for operators of large fleets and would evaluate repairs at predetermined planned maintenance visits as part of the maintenance program. Manufacturers and operators may develop other techniques, which would be acceptable as long as they fulfill the objectives of this proposed rule, and are FAA approved.

The first technique generally involves the execution of the following three stages:

Stage 1—Data Collection

This stage specifies what structure should be assessed for repairs and collects data for further analysis. If a repair is on a structure in an area of concern, the analysis continues, otherwise the repair does not require classification per this program.

Repair assessment guidelines for each model will provide a list of structure for which repair assessments are required.

Some manufacturers have reduced this list by determining the inspection requirements for critical details. If the requirements are equal to normal maintenance checks (e.g., BZI checks), those details were excluded from this list.

Repair details are collected for further analysis in Stage 2. Repairs that do not meet the static strength requirements or are in a bad condition are immediately identified, and corrective actions must be taken before further flight.

Stage 2—Repair Categorization

The repair categorization is accomplished by using the data gathered in Stage 1 to answer simple questions regarding structural characteristics.

If the maintenance program is at least as rigorous as the BZI identified in the manufacturer's model specific repair assessment guidelines, well designed repairs in good condition meeting size and proximity requirements are Category A. Simple condition and design criteria questions are provided in Stage 2 to define the lower bounds of Category B and Category C repairs. The process continues for Category B and C repairs.

Stage 3—Determination of Structural Maintenance Requirements

The supplemental inspection and/or replacement requirements for Category B and C repairs are determined in this stage. Inspection requirements for the repair are determined by calculation or by using predetermined values provided by the manufacturer, or other values obtained using an FAA-approved method.

In evaluating the first supplemental inspection, Stage 3 will define the inspection threshold in flight cycles measured from the time of repair installation. If the time of installation of the repair is unknown and the airplane has exceeded the assessment implementation times or has exceeded the time for first inspection, the first inspection should occur by the next ''C-check'' interval, or equivalent cycle limit after the repair data is gathered (Stage 1).

An operator may choose to accomplish all three stages at once, or just Stage 1. In the latter case, the operator would be required to adhere to the schedule specified in the FAA-approved model specific repair assessment guidelines for completion of Stages 2 and 3.

Incorporating the maintenance requirements for Category B and C repairs into an operator's individual airplane maintenance or inspection program completes the repair assessment process for the first technique.

The second technique would involve setting up a repair maintenance program to evaluate all fuselage pressure boundary repairs at each predetermined maintenance visit to confirm that they are permanent. This technique would require the operator to choose an inspection method and interval in accordance with the FAA-approved repair assessment guidelines. The repairs whose inspection requirements are fulfilled by the chosen inspection method and interval would be inspected in accordance with the regular FAA-approved maintenance program. Any repair that is not permanent, or whose inspection requirements are not fulfilled by the chosen inspection method and interval, would either be: (1) Upgraded to allow utilization of the chosen inspection method and interval, or (2) individually tracked to account for the repair's unique inspection method and interval requirements. This process is then repeated at the chosen inspection interval.

Repairs added between the predetermined maintenance visits, including interim repairs installed at remote locations, would be required either to have a threshold greater than the length of the predetermined maintenance visit or to be tracked individually to account for the repair's unique inspection method and interval requirements. This would ensure the airworthiness of the structure until the next predetermined maintenance visit, at which time the repair would be evaluated as part of the repair maintenance program.

Whichever technique is used, there may be some repairs that cannot easily be upgraded to Category A for cost, downtime, or technical reasons. Such repairs will require supplemental inspections, and each operator should make provisions for this when incorporating the repair assessment guidelines into its maintenance program.

Repair Assessment Implementation Time

The implementation time for the assessment of existing repairs is based on the findings of the repair surveys and fatigue damage considerations. The repair survey findings indicated that all repairs reviewed appeared to be in good structural condition. This tended to validate the manufacturer's assumptions in designing both the repair and the basic structure. Since the manufacturer had based the design stress levels on a chosen Design Service Goal (DSG), it was concluded that the repair assessment needed to be implemented sometime before a specific model reached its DSG. Based on this logic, the manufacturers and operators established an upper bound for an assessment to be completed and then reduced it to establish an ''implementation time,'' defined as 75 percent of DSG in terms of flight cycles.

Therefore, under this approach, incorporation of the repairs assessment guidelines into an airplane's maintenance or inspection program ideally should be accomplished before an airplane accumulates 75 percent of DSG. After the guidelines are incorporated into the maintenance or inspection program, operators should begin the assessment process for existing fuselage repairs within the flight cycle limit specified in the FAA-approved model specific repair assessment guidelines. There are three deadlines for beginning the repair assessment process, depending on the cycle age of the airplane on the effective date of the rule.

1. Airplane Cycle Age Equal to or less than Implementation Time on the Rule Effective Date

The operator would be required to incorporate the guidelines in its maintenance or inspection program by the flight cycle implementation time, or one year after the effective date of the rule, whichever occurs later. The assessment process would begin (e.g., accomplishment of Stage 1) on or before the cycle limit specified in the repair assessment guidelines (generally equivalent to a ''D'' check) after incorporation of the guidelines.

2. Airplane Cycle Age greater than the Implementation Time but less than the DSG on the Rule Effective Date

The operator would be required to incorporate the guidelines in its maintenance or inspection program within one year of the rule effective date. The assessment process would begin (e.g., accomplishment of Stage 1) on or before the cycle limit in the repair assessment guidelines (generally equivalent to a ''D'' check), not to exceed the cycle limit computed by adding the DSG to the cycle limit equivalent of a ''C'' check (also specified in the repair assessment guidelines) after incorporation of the guidelines.

3. Airplane Cycle Age greater than the DSG on the Rule Effective Date

The operator would be required to incorporate the guidelines in its maintenance or inspection program within one year of the rule effective date. The assessment process would begin (e.g., accomplishment of Stage 1) on or before the cycle limit specified in the repair assessment guidelines (equivalent to a ''C'' check) after incorporation of the guidelines.

In each of these three cases, the assessment process would have to be completed, the inspections conducted, and any necessary corrective action taken, all in accordance with the schedule specified in the FAA-approved repair assessment guidelines.

Discussion of the Proposed Rule

This proposed rule is intended to ensure that a comprehensive repairs assessment for damage-tolerance be completed for fuselage pressure boundary repairs, and that the resulting inspections, modifications and corrective actions (if any) be accomplished in accordance with the model specific repair assessment guidelines. To comply with this, the operator would need to consider the following:

1. The means by which the FAA-approved repair assessment guidelines are incorporated into a certificate holder's FAA-approved maintenance or inspection program, as would be required by the proposed rule, is subject to approval by the certificate holder's principal maintenance inspector (PMI) or other cognizant airworthiness inspector.

2. The repair assessment guidelines must be approved by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate of the airplane.

3. This rule would not impose any new reporting requirements; however, normal reporting required under 14 CFR 121.703 would still apply.

4. This rule would not impose any new FAA recordkeeping requirements. However, as with all maintenance, the current operating regulations (e.g., 14 CFR 121.380) already impose recordkeeping requirements that would apply to the actions required by this proposed rule. When incorporating the repair assessment guidelines into its approved maintenance program, each operator should address the means by which it will comply with these recordkeeping requirements. That means of compliance, along with the remainder of the program, would be subject to approval by the cognizant PMI or other cognizant airworthiness inspector.

5. The scope of the assessment is limited to repairs on the fuselage pressure boundary (fuselage skins and pressure webs).

a. A list of Service Bulletins that are the subject of AD's will be contained in the model specific repair assessment guidelines with required post modification/repair inspection programs, as required.

b. A list of other structural Service Bulletins will be provided in the model specific repair assessment guidelines with associated inspection threshold and repeat intervals.

6. The repair assessment guidelines provided by the manufacturer do not generally apply to structure modified by a Supplemental Type Certificate (STC). The operator, however, would still be responsible, under this proposed rule, to provide repair assessment guidelines applicable to the entire fuselage external pressure boundary that meets the program objectives specified in Advisory Circular 121–XX. This means that the operator should develop, submit, and gain FAA approval of guidelines to evaluate repairs to such structure.

It is recognized that operators do not usually have the resources to determine a DSG or to develop repair assessment guidelines, even for a very simple piece of structure. The FAA expects the STC holder to assist the operators in preparing the required documents. If the STC holder is out of business, or is otherwise unable to provide assistance, the operator would have to acquire the FAA-approved guidelines independently. To keep the airplanes in service, it is always possible for operators, individually or as a group, to hire the necessary expertise to develop and gain approval of repair assessment guidelines and the associated DSG. Ultimately, the operator remains responsible for the continued safe operation of the airplane.

The cost and difficulty of developing guidelines for modified structure may be less than that for the basic airplane structure for three reasons. First, the only modifications made by persons other than the manufacturer that are of concern in complying with this proposed rule are those that affect the fuselage pressure boundary. Of those that do affect this structure, many are small enough to qualify as Category A repairs under the repair assessment guidelines, based solely on their size. Second, if the modified structure is identical, or very similar, to the manufacturer's original structure, then only a cursory investigation may be necessary. In such cases, the manufacturer's repair assessment guidelines may be shown to be applicable with few, if any, changes. If the operator determines that a repair to modified structure can be evaluated using the manufacturer's model specific repair assessment guidelines, that determination should be documented and submitted to the operator's PMI or other cognizant airworthiness inspector for approval. For all other repairs, a separate program would need to be developed. Third, the modification may have been made so recently that no repair assessment guidelines would be needed for many years. Compliance with this proposed rule could be shown by establishing the DSG for the new modified structure, calculating an implementation time that is equal to three quarters of that DSG, and then adding a statement to the operations specifications that repair assessment guidelines would be incorporated into the maintenance program by that time. If the modified structure is very similar to the original, then the DSG for the modified structure may also be very similar. No repair assessment guidelines would be needed until 75 percent of that goal is reached. For example, in the case of a large cargo door, such installations are often made after the airplane has reached the end of its useful life as a passenger-carrying airplane. For new structure, the clock would start on repair assessment at the time of installation. Further, since the DSG is measured in cycles, and cargo operation usually entails fewer operational cycles than passenger operations, the due date for incorporation of the repair assessment guidelines for that structure could be many years away.

Compliance with this proposed rule would require that conditions such as those described above be properly documented in each operator's FAA-approved maintenance program; however, the cost of doing so should not be significant. There should be very few examples where the STC holder is unavailable, and the operators must bear the cost of developing a complete repair assessment guidelines document. Guidance on how to comply with this aspect of the proposed rule is also discussed in the accompanying Advisory Circular 120–XX.

7. An operator's repair assessment program would have to include damage-tolerance assessments for new repairs. Repairs made in accordance with the revised version of the SRM would already have a damage-tolerance assessment performed; otherwise, the manufacturer's repair assessment guidelines could be used for this purpose, or operators may develop other methods as long as they achieve the same objectives.

8. Once the airworthiness inspector having oversight responsibilities is

satisfied that the operator's continued airworthiness maintenance or inspection program contains all of the elements of the FAA-approved repair assessment guidelines, the airworthiness inspector would approve an operation specification(s) or inspection program revision. This would have the effect of requiring use of the approved repair assessment guidelines.

In summary, based on discussions with representatives of the affected industry, recommendations from ARAC, and a review of current rules and regulations affecting repair of primary structure, the FAA recognizes the need for a repairs assessment program to be incorporated into the maintenance program for certain transport category airplanes.

The proposed rule would prohibit the operation of certain transport category airplanes operated under 14 CFR parts 91, 121, 125, and 129 beyond a specified compliance time, unless the operator of those airplanes had incorporated FAA-approved repair assessment guidelines applicable to the fuselage pressure boundary in its operation specification(s) or approved inspection program, as applicable.

FAA Advisory Material

In addition to the amendments proposed in this notice, the ARAC has developed Advisory Circular 120–XX, ''Repair Assessment of Pressurized Fuselages.'' This AC would provide guidance for operators of the affected transport category airplanes on how to incorporate FAA-approved repair assessment guidelines into their FAA-approved maintenance or inspection program. Public comments concerning the proposed AC are invited by separate notice published elsewhere in this issue of the **Federal Register**.

Regulatory Evaluation

Changes to federal regulations must undergo several economic analyses. First, Executive Order 12866 directs Federal agencies to promulgate new regulations or modify existing regulations only if the potential benefits to society justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Finally, the Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. In conducting these assessments, the FAA has determined that this proposed rule: (1) Would generate benefits exceeding its costs and is not ''significant'' as defined in Executive Order 12866; (2) is not ''significant'' as defined in DOT's Policies and Procedures; (3) would not have a significant impact on a substantial number of small entities; and (4) would not constitute a barrier to international trade. These analyses, available in the docket, are summarized below.

Regulatory Evaluation Summary

Costs and Benefits

The proposed rule would result in costs to the manufacturers and operators of the affected airplanes and to the FAA. Costs to manufacturers would include revising the Structural Repair Manuals, developing repair assessment guidelines, and developing and conducting training programs for Original Equipment Manufacturers' Engineers, airplane operators' inspectors, and the FAA's PMIs or other cognizant airworthiness inspector. Costs to operators would include inspector training, integrating the assessment program into the maintenance program for each airplane model, assessing and subsequently inspecting repairs, and maintaining records. Cost to the FAA would include PMI/other cognizant airworthiness inspector training and review/approval of assessment programs.

The FAA estimates that the total cost to all affected manufacturers would be $43.3 million over the years 1995 through 2020, or $26.9 million discounted to present value. The equivalent annualized cost would be $2.3 million. Although this proposed rule would not directly impose any costs on manufacturers, the FAA recognizes that manufacturers have incurred, and will continue to incur, costs in order to develop and provide data to operators that will enable them to comply with the proposal. The FAA has chosen to attribute these costs to the proposed rule, beginning in 1995. The total cost to airplane operators would be $25.5 million over the years 1997 through 2020, or $10.2 million discounted to present value. The equivalent annualized cost would be $893,622. The total costs to the FAA would be $516,000, or $324,358 discounted to present value. The equivalent annualized cost would be $28,280. The total cost of the proposed rule to all affected entities would be $69.3 million, or $37.5 million discounted to present value. The equivalent annualized cost would be $3.2 million.

The cause of an airplane accident has never been attributed to a properly applied repair to the airplane models that would be affected by the proposed rule. Nevertheless, airplanes designed and certificated to older technology are operated beyond their original design service objectives, and the FAA has determined that the repair assessment program to ensure the continued airworthiness of these aging airplanes could prevent structural failure and resulting accidents. The benefits of the proposed rule, therefore, are based on the avoidance of such accidents.

The FAA estimates that the prevention of an accident resulting in the loss of an average affected airplane and half its passengers and crew would result in present value benefits of $46.8 million, assuming that the accident would otherwise have occurred midway through the analysis period. The FAA cannot predict the number of accidents that would be prevented by this proposed rule. Based on one such prevented loss, however, the FAA has determined that the proposed rule would be cost-beneficial.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by government regulations. The RFA requires a Regulatory Flexibility Analysis if the proposed or final rule would have significant economic impact, either detrimental or beneficial, on a substantial number of small entities. FAA Order 2100.14A, Regulatory Flexibility Criteria and Guidance, prescribes standards for complying with RFA review requirements in FAA rulemaking actions. The Order defines ''small entities'' in terms of thresholds, ''significant economic impact'' in terms of annualized cost thresholds, and ''substantial number'' as a number which is not less than eleven and which is more than one-third of the small entities subject to the proposed or final rule.

The proposed rule would affect Boeing Commercial Airplane Group, Douglas Aircraft Company, Lockheed Aeronautical Systems Company, Airbus, British Aerospace, and Fokker Aircraft B.V. Order 2100.14A specifies a size threshold for classification as a small manufacturer as 75 or fewer employees. Since none of these manufacturers has 75 or fewer employees, the proposed rule would not have a significant economic impact on a substantial number of small manufacturers.

The proposed rule would also affect operators of certain U.S.-registered B707/720, B727, B737, B747, DC–8, DC–9/MD80, DC–10, L–1011, A300, BAC 1–11 and F28 airplanes. Order 2100.14A specifies a size threshold for classification as a small operator as ownership of 9 or fewer aircraft. The annualized cost thresholds for significant impact, expressed in 1995 dollars, are $119,900 for a scheduled air carrier whose fleet of airplanes have seating capacities of over 60, $67,000 for other scheduled air carriers, and $4,700 for an unscheduled operator. The FAA examined the annualized costs of the proposed rule to ''small'' operators of the current fleet of affected airplanes and determined that no small operator's annualized cost would exceed the threshold of $4,700. Therefore, the proposed rule would not have a significant impact on a substantial number of small operators.

International Trade Impact Assessment

The proposed rule would not constitute a barrier to international trade, including the export of American airplanes to foreign countries and the import of foreign airplanes into the United States.

Federalism Implications

The regulations proposed herein will not have substantial direct effects on the States, or on the relationship between the national government and the States, or on the distribution of power and responsibility among the various levels of the government. Therefore, in accordance with Executive Order 12612, it is determined that this proposed rule would not have significant federalism implications to warrant the preparation of a Federalism Assessment.

International Civil Aviation Organization (ICAO) and Joint Aviation Regulations

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with ICAO Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that this proposed rule would not conflict with any international agreement of the United States.

Paperwork Reduction Act

There are no new requirements for information collection associated with this proposed rule that would require approval from the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)).

Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distributions as he or she considers appropriate. Because this proposed rule would apply to the operation of certain transport category airplanes under parts 91, 121, 125, and 129 of Title 14, if could, if adopted, affect intrastate aviation in Alaska. The FAA therefore specifically requests comments on whether there is justification for applying the proposed rule differently to intrastate operations in Alaska.

Conclusion

Because the proposed repair assessment programs are not expected to result in substantial economic cost, the FAA has determined that this proposed regulations is not a significant regulatory action under Executive Order 12866. The FAA has also determined that this proposal is not significant under DOT Regulatory Policies and Procedures (44 FR 11034, February 25, 1979). In addition, the FAA certifies that this proposal, if adopted, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act, since none are affected. An initial evaluation of this proposal, including a Regulatory Flexibility Determination and an International Trade Impact Analysis, has been placed in the docket. A copy may be obtained by contacting the person identified under the caption FOR FURTHER INFORMATION CONTACT.

List of Subjects

14 CFR Part 91

Aircraft, Aviation safety, Maintenance, Rebuilding, Pressurized fuselage repair and alteration.

14 CFR Parts 121, 125, and 129

Air carriers, Aircraft, Aviation safety, Pressurized fuselage repair assessment, Safety, Transportation.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR parts 91, 121, 125, and 129 of the Federal Aviation Regulations as follows:

PART 91—GENERAL OPERATING AND FLIGHT RULES

1. The authority citation for part 91 continues to read:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120, 44101, 44111, 44701, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46502, 46504, 46506–46507, 47122, 47508, 47528–47531.

2. A new § 91.410 is added to read as follows:

§ 91.410 Repair assessment for pressurized fuselages.

No certificate holder may operate an Airbus Model A300, British Aerospace Model BAC 1–11, Boeing Model 707, 720, 727, 737 or 747, McDonnell Douglas Model DC–8, DC–9/MD–80 or DC–10, Fokker Model F28, or Lockheed Model L–1011 airplane beyond the applicable flight cycle implementation time specified in the following paragraphs, or [a date one year after the effective date of the amendment], whichever occurs later, unless repair assessment guidelines applicable to the fuselage pressure boundary (fuselage skin and bulkhead webs) that have been approved by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate for the affected airplane are incorporated within its inspection program:

(a) For the A300, the flight cycle implementation time is:

(1) Model B2, 36,000 flights.

(2) Model B4–100, 30,000 flights above the window line, and 36,000 flights below the window line.

(3) Model B4–200, 25,500 flights above the window line, and 34,000 flights below the window line.

(b) For all models of the BAC 1–11, the flight cycle implementation time is 60,000 flights.

(c) For all models of the Boeing 707, the flight cycle implementation time is 15,000 flights.

(d) For all models of the Boeing 720, the flight cycle implementation time is 23,000 flights.

(e) For all models of the Boeing 727, the flight cycle implementation time is 45,000 flights.

(f) For all models of the Boeing 737, the flight cycle implementation time is 60,000 flights.

(g) For all models of the Boeing 747, the flight cycle implementation time is 15,000 flights.

(h) For all models of the Douglas DC–8, the flight cycle implementation time is 30,000 flights.

(i) For all models of the Douglas DC–9/MD–80, the flight cycle implementation time is 60,000 flights.

(j) For all models of the Douglas DC–10, the flight cycle implementation time is 30,000 flights.

(k) For all models of the Lockheed L–1011, the flight cycle implementation time is 27,000 flights.

(l) For the Fokker F–28 Mark 1000, 1000C, 2000, 3000, 3000C, and 4000, the flight cycle implementation time is 60,000 flights.

PART 121—OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

1. The authority citation for part 121 continues to read:

Authority: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 44901, 44903–44904, 44912, 46105.

2. A new § 121.370 is added to read as follows:

§ 121.370 Repair assessment for pressurized fuselages.

No certificate holder may operate an Airbus Model A300, British Aerospace Model BAC 1–11, Boeing Model 707, 720, 727, 737 or 747, McDonald Douglas Model DC–8, DC–9/MD–80 or DC–10, Fokker Model F28, or Lockheed Model L–1011 airplane beyond the applicable flight cycle implementation time specified in the following paragraphs, or [a date one year after the effective date of the amendment], whichever occurs later, unless its operation specifications have been revised to reference repair assessment guidelines applicable to the fuselage pressure boundary (fuselage skin and bulkhead webs), and those guidelines are incorporated in its maintenance program. The repair assessment guidelines must be approved by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate for the affected airplane.

(a) For the A300, the flight cycle impelementation time is:

(1) Model B2, 36,000 flights.

(2) Model B4–100, 30,000 flights above the window line, and 36,000 flights below the window line.

(3) Model B4–200, 25,500 flights above the window line, and 34,000 flights below the window line.

(b) For all models of the BAC 1–11, the flight cycle implementation time is 60,000 flights.

(c) For all models of the Boeing 707, the flight cycle implementation time is 15,000 flights.

(d) For all models of the Boeing 720, the flight cycle implementation time is 23,000 flights.

(e) For all models of the Boeing 727, the flight cycle implementation time is 45,000 flights.

(f) For all models of the Boeing 737, the flight cycle implementation time is 60,000 flights.

(g) For all models of the Boeing 747, the flight cycle implementation time is 15,000 flights.

(h) For all models of the Douglas DC–8, the flight cycle implementation time is 30,000 flights.

(i) For all models of the Douglas DC–9/MD–80, the flight cycle implementation time is 60,000 flights.

(j) For all models of the Douglas DC–10, the flight cycle implementation time is 30,000 flights.

(k) For all models of the Lockheed L–1011, the flight cycle implementation time is 27,000 flights.

(l) For the Fokker F–28 Mark 1000, 1000C, 2000, 3000, 3000C, and 4000, the flight cycle implementation time is 60,000 flights.

PART 125—CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE

1. The authority citation for part 125 continues to read:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, 44705, 44710–44711, 44713, 44716–44717, 44722.

2. A new § 125.248 is added to read as follows:

§ 125.248 Repair assessment for pressurized fuselages.

No certificate holder may operate an Airbus Model A300, British Aerospace Model BAC 1–11, Boeing Model 707, 720, 727, 737 or 747, McDonnell Douglas Model DC–8, DC–9/MD–80 or DC–10, Fokker Model F28, or Lockheed Model L–1011 beyond the applicable flight cycle implementation time specified in the following paragraphs or [a date one year after the effective date of the amendment], whichever occurs later, unless its operation specifications have been revised to reference repair assessment guidelines applicable to the fuselage pressure boundary (fuselage skin and bulkhead webs), and those guidelines are incorporated in its maintenance program. The repair assessment guidelines must be approved by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate for the affected airplane.

(a) For the A300, the flight cycle implementation time is:

(1) Model B2, 36,000 flights.

(2) Model B4–100, 30,000 flights above the window line, and 36,000 flights below the window line.

(3) Model B4–200, 25,500 flights above the window line, and 34,000 flights below the window line.

(b) For all models of the BAC 1–11, the flight cycle implementation time is 60,000 times.

(c) For all models of the Boeing 707, the flight cycle implementation time is 15,000 times.

(d) For all models of the Boeing 720, the flight cycle implementation time is 23,000 times.

(e) For all models of the Boeing 727, the flight cycle implementation time is 45,000 flights.

(f) For all models of the Boeing 737, the flight cycle implementation time is 60,000 flights.

(g) For all models of the Boeing 747, the flight cycle implementation time is 15,000 flights.

(h) For all models of the Douglas DC–8, the flight cycle implementation time is 30,000 flights.

(i) For all models of the Douglas DC–9/MD–80, the flight cycle implementation time is 60,000 flights.

(j) For all models of the Douglas DC–10, the flight cycle implementation time is 30,000 flights.

(j) For all models of the Lockheed L–1011, the flight cycle implementation time is 27,000 flights.

(l) For the Fokker F–28 Mark 1000, 1000C, 2000, 3000, 3000C, and 4000, the flight cycle implementation time is 60,000 flights.

PART 129—OPERATIONS: FOREIGN AIR CARRIERS AND FOREIGN OPERATORS OF U.S.-REGISTERED AIRCRAFT ENGAGED IN COMMON CARRIAGE

1. The authority citation for part 129 continues to read:

Authority: 49 U.S.C. 106(g), 40104–40105, 40113, 40119, 44701–44702, 44712, 44716–44717, 44722, 44901–44904, 44906.

2. A new § 129.32 is added to read as follows:

§ 129.32 Repair assessment for pressurized fuselages.

No certificate holder may operate an Airbus Model A300, British Aerospace Model BAC 1–11, Boeing Model 707, 720, 727, 737 or 747, McDonnell Douglas Model DC–8, DC–9/MD–80 or DC–10, Fokker Model F28, or Lockheed Model L–1011 beyond the applicable flight cycle implementation time specified in the following paragraphs, or [a date one year after the effective date of the amendment], whichever occurs later, unless its operation specifications have been revised to reference repair assessment guidelines applicable to the fuselage pressure boundary (fuselage skin and bulkhead webs), and those guidelines are incorporated in its maintenance program. The repair assessment guidelines must be approved by the FAA Aircraft Certification Office (ACO) having cognizance over the type certificate for the affected airplane.

(a) For the A300, the flight cycle implementation time is:

(1) Model B2, 36,000 flights.

(2) Model B4–100, 30,000 flights above the window line, and 36,000 flights below the window line.

(3) Model B4–200, 25,500 flights above the window line, and 34,000 flights below the window line.

(b) For all models of the BAC 1–11, the flight cycle implementation time is 60,000 flights.

(c) For all models of the Boeing 707, the flight cycle implementation time is 15,000 flights.

(d) For all models of the Boeing 720, the flight cycle implementation time is 23,000 flights.

(e) For all models of the Boeing 727, the flight cycle implementation time is 45,000 flights.

(f) For all models of the Boeing 737, the flight cycle implementation time is 60,000 flights.

(g) For all models of the Boeing 747, the flight cycle implementation time is 15,000 flights.

(h) For all models of the Douglas DC–8, the flight cycle implementation time is 30,000 flights.

(i) For all models of the Douglas DC–9/MD–80, the flight cycle implementation time is 60,000 flights.

(j) For all models of the Douglas DC–10, the flight cycle implementation time is 30,000 flights.

(k) For all models of the Lockheed L–1011, the flight cycle implementation time is 27,000 flights.

(l) For the Fokker F–28 Mark 1000, 1000C, 2000, 3000, 3000C, and 4000, the flight cycle implementation time is 60,000 flights.

Issued in Washington, D.C. on December 22, 1997.

Thomas E. McSweeney,

Director, Aircraft Certification Service.

[FR Doc. 97–34166 Filed 12–31–97; 8:45 am]

BILLING CODE 4910–13–M