improvement in safety that was intended. The existing 25.361(b) requires the consideration of a pure torque condition with no consideration of other combined loads (e.g. lateral loads) that are associated with engine failures. Furthermore, this pure torque load is treated as a simple static limit load condition without regard to any dynamic amplification. Then, the ultimate design load is determined by using a safety factor of 1.5 on the static torque load. In the past, the engine manufacturers estimated the pure limit torque load condition based on typical failure loads and provided them to the airframe manufacturer. These design limit loads did not necessarily reflect the worst possible failure condition and did not include the possible effects of dynamic amplification. The FAA considers that engines have evolved to a point that such a simplified approach, developed over 40 years ago for the first turbojet engines, is no longer appropriate for modern high bypass turbofan engines. The FAA and the industry (including both the engine and airframe manufacturers) have continued to address this issue, and to refine the necessary design approach, since the first special conditions were issued on this subject for other similar airplane types. The design approach now contains a more rational treatment of sudden engine stoppage events. The airframe manufacturers had already begun to employ the improved criteria, even though the FAA had not updated the special condition at the time that Notice No. 25–99–05–SC was published.

Another commenter, who is familiar with the more rational approach developed by the FAA and industry, was also concerned that it was not reflected in Notice No. 25–99–05–SC. This could allow an interpretation that would result in an inadequate level of safety. This commenter believes the special condition should be modified to reflect the more comprehensive approach that is already in practice in the industry.

The FAA concurs with these commenters. The special condition is modified to reflect the more comprehensive approach associated with determination of the load and the method of applying it to the airplane. Phrases have been added to the special condition to reflect the transient dynamic nature of the loads and the specific types of failures that must be included.

The safety factors associated with these loads remain the same as proposed in Notice No. 25–99–05–SC. This is justified because every effort is being made to develop the true ultimate transient load time history from actual tests of the most extreme conditions of operation and with the most severe failures, such as the blade failure tests required under 14 CFR 33.94 ''Blade containment and rotor unbalance tests.'' The derived loads include all aspects of the transient load, including torque and lateral load time histories. This transient loading is then applied to the engine mounts, pylon, and airframe structure in a comprehensive dynamic analysis.

The application of this revised special condition will not be an undue burden for Boeing since, on their own initiative, they have used the more rational criteria in designing the Model 767–400ER.

Applicability

As discussed above, these special conditions are applicable to the Boeing Model 767–400ER. Should Boeing apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101(a)(1).

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the **Federal Register**; however, as the certification date for the Boeing Model 767–400ER is imminent, the FAA finds that good cause exists to make these special conditions effective upon issuance.

Conclusion

This action affects only certain novel or unusual design features on one airplane model. It is not a rule of general applicability, and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

list of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Boeing Model 767–400ER airplanes.

1. *Engine Failure Loads.* In lieu of compliance with § 25.361(b), the following special condition applies:

a. For turbine engine installations, the engine mounts, pylons and adjacent supporting airframe structure must be designed to withstand 1g level flight loads acting simultaneously with the maximum limit torque loads imposed by each of the following:

(1) Sudden engine deceleration due to a malfunction which could result in a temporary loss of power or thrust,

(2) The maximum acceleration of the engine.

b. For auxiliary power unit installations, the power unit mounts and adjacent supporting airframe structure must be designed to withstand 1g level flight loads acting simultaneously with the maximum limit torque loads imposed by each of the following:

(1) Sudden auxiliary power unit deceleration due to malfunction or structural failure; and

(2) The maximum acceleration of the power unit.

c. For engine supporting structure, an ultimate loading condition must be considered that combines 1g flight loads with the transient dynamic loads resulting from:

(1) The loss of any fan, compressor, or turbine blade; and separately

(2) Where applicable to a specific engine design, any other engine structural failure that results in higher loads.

d. The ultimate loads developed from the conditions specified in paragraphs (c)(1) and (c)(2) are to be multiplied by a factor of 1.0 when applied to engine mounts and pylons and multiplied by a factor of 1.25 when applied to adjacent supporting airframe structure.

Issued in Renton, Washington on September 16, 1999.

Vi L. Lipski,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service, ANM–100.

[FR Doc. 99–24793 Filed 9–22–99; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM155; Special Conditions No. 25–148–SC]

Special Conditions: Boeing Model 767–300 Series Airplanes; Seats with Inflatable Lapbelts

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Boeing Model 767–300 series airplanes. These airplanes as modified by Am-Safe, Inc. will have novel and

unusual design features associated with seats with inflatable lapbelts. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

EFFECTIVE DATE: October 25, 1999.

FOR FURTHER INFORMATION CONTACT: Jeff Gardlin, Airframe and Cabin Safety Branch, ANM–115, Transport Airplane Directorate, Aircraft Certification Service, FAA, 1601 Lind Avenue SW., Renton, Washington 98055–4056; telephone (206) 227–2136; facsimile (425) 227–1149.

SUPPLEMENTARY INFORMATION:

Background

On March 8, 1999, Am-Safe Inc. 240 North 48th Avenue, Phoenix, Arizona, 85043, applied for a supplemental type certificate to install inflatable lapbelts for head injury protection on certain seats in Boeing Model 767–300 series airplanes. The Model 767–300 series airplane is a swept-wing, conventional-tail, twin-engine, turbofan-powered transport. The inflatable lapbelt is designed to limit occupant forward excursion in the event of an accident. This will reduce the potential for head injury, thereby reducing the Head Injury Criteria (HIC) measurement. The inflatable lapbelt behaves similarly to the fixed mounted airbag, but in this case the airbag is integrated into the lapbelt, and deploys away from the seated occupant. While airbags are now standard in the automotive industry, the use of an inflatable lapbelt is novel for commercial aviation.

Title 14 Code of Federal Regulations (14 CFR) 25.785 requires that occupants be protected from head injury by either the elimination of any injurious object within the striking radius of the head, or by padding. Traditionally, this has required a set back of 35'' from any bulkhead or other rigid interior feature or, where not practical, specified types of padding. The relative effectiveness of these means of injury protection was not quantified. With the adoption of Amendment 25–64 to 14 CFR part 25, a new standard that quantifies required head injury protection was created.

Title 14 CFR 25.562 specifies that dynamic tests must be conducted for each seat type installed in the airplane. In particular, the regulations require that persons not suffer serious head injury under the conditions specified in the tests, and that a HIC measurement of not more than 1,000 units be recorded, should contact with the cabin interior occur. While the test conditions described in this section are specific, it is the intent of the requirement that an adequate level of head injury protection be provided for crash severity up to and including that specified.

While Amendment 25–64 is not part of the Model 767–300 certification basis, it is recognized that the installation of inflatable lapbelts will eventually be proposed for airplanes that do include this requirement. In addition HIC is the only available quantifiable measure of head injury protection. Therefore, the FAA will require that a HIC of less than 1,000 be demonstrated for occupants of seats incorporating the inflatable lapbelt.

Because 25.562 and associated guidance do not adequately address seats with inflatable lapbelts, the FAA recognizes that appropriate pass/fail criteria need to be developed that do fully address the safety concerns specific to occupants of these seats.

The inflatable lapbelt has two potential advantages over other means of head impact protection. First, it can provide significantly greater protection than would be expected with energy absorbing pads, for example, and second, it can provide essentially equivalent protection for occupants of all stature. These are significant advantages from a safety standpoint, since such devices will likely provide a level of safety that exceeds the minimum standards of the Federal Aviation Regulations (FAR). Conversely, airbags in general are active systems, and must be relied upon to activate properly when needed, as opposed to an energy absorbing pad or upper torso restraint that is passive, and always available. These potential advantages must be balanced against the potential disadvantages in order to develop standards that will provide an equivalent level of safety to that intended by the regulations.

The FAA has considered the installation of inflatable lapbelts to have two primary safety concerns: First, that they perform properly under foreseeable operating conditions, and second, that they do not perform in a manner or at such times as would constitute a hazard to the airplane or occupants. This latter point has the potential to be the more rigorous of the requirements, owing to the active nature of the system. With this philosophy in mind, the FAA has considered the following as a basis for the special conditions.

The inflatable lapbelt will rely on electronic sensors for signaling and pyrotechnic charges for activation so that it is available when needed. These same devices could be susceptible to inadvertent activation, causing deployment in a potentially unsafe manner. The consequences of such deployment must be considered in establishing the reliability of the system. Am-Safe, Inc. must substantiate that the effects of an inadvertent deployment in flight are either not a hazard to the airplane, or that such deployment is an extremely improbable occurrence (less than 10^{-9} per flight hour). The effect of an inadvertent deployment on a passenger or crewmember that might be positioned close to the airbag should also be considered. The person could be either standing or sitting. A minimum reliability level will have to be established for this case, depending upon the consequences, even if the effect on the airplane is negligible.

The potential for an inadvertent deployment could be increased as a result of conditions in service. The installation must take into account wear and tear so that the likelihood of an inadvertent deployment is not increased to an unacceptable level. In this context, an appropriate inspection interval and self-test capability are considered necessary. Other outside influences are lightning and high intensity electromagnetic fields (HIRF). Since the sensors that trigger deployment are electronic, they must be protected from the effects of these threats. Existing Special Conditions No. 25–ANM–18 regarding lightning and HIRF are therefore applicable. For the purposes of compliance with those special conditions, if inadvertent deployment could cause a hazard to the airplane, the airbag is considered a critical system; if inadvertent deployment could cause injuries to persons, the airbag should be considered an essential system. Finally, the airbag installation should be protected from the effects of fire, so that an additional hazard is not created by, for example, a rupture of the pyrotechnic squib.

In order to be an effective safety system, the airbag must function properly and must not introduce any additional hazards to occupants as a result of its functioning. There are several areas where the airbag differs from traditional occupant protection systems, and requires special conditions to ensure adequate performance.

Because the airbag is essentially a single use device, there is the potential that it could deploy under crash conditions that are not sufficiently severe as to require head injury protection from the airbag. Since an actual crash is frequently composed of a series of impacts before the airplane

comes to rest, this could render the airbag useless if a larger impact follows the initial impact. This situation does not exist with energy absorbing pads or upper torso restraints, which tend to provide protection according to the severity of the impact. Therefore, the airbag installation should be such that the airbag will provide protection when it is required, and will not expend its protection when it is not needed. There is no requirement for the airbag to provide protection for multiple impacts, where more than one impact would require protection.

Since each occupant's restraint system provides protection for that occupant only, the installation must address seats that are unoccupied. It will be necessary to show that the required protection is provided for each occupant regardless of the number of occupied seats, and considering that unoccupied seats may have lapbelts that are buckled.

Since a wide range of occupants could occupy a seat, the inflatable lapbelt should be effective for a wide range of occupants. The FAA has historically considered the range from the fifth percentile female to the ninety-fifth percentile male as the range of occupants that must be taken into account. In this case, the FAA is proposing consideration of a larger range of occupants, due to the nature of the lapbelt installation and its close proximity to the occupant. In a similar vein, these persons could have assumed the brace position, for those accidents where an impact is anticipated. Test data indicate that occupants in the brace position may not require supplemental protection, and so it would not be necessary to show that the inflatable lapbelt will enhance the brace position. However, the inflatable lapbelt must not introduce a hazard in that case if it deploys into the seated, braced occupant.

Another area of concern is the use of seats so equipped by children whether lap-held, in approved child safety seats, or occupying the seat directly. The installation needs to address the use of the inflatable lapbelt by children, either by demonstrating that it will function properly, or by adding appropriate limitation on usage.

Since the inflatable lapbelt will be electrically powered, there is the possibility that the system could fail due to a separation in the fuselage. Since this system is intended as crash/post-crash protection means, failure due to fuselage separation is not acceptable. As with emergency lighting, the system should function properly if such a separation occurs at any point in the fuselage. A separation that occurs at the location of the inflatable lapbelt would not have to be considered.

Since the inflatable lapbelt is likely to have a large volume displacement, the inflated bag could potentially impede egress of passengers. Since the bag deflates to absorb energy, it is likely that an inflatable lapbelt would be deflated at the time that persons would be trying to leave their seats. Nonetheless, it is considered appropriate to specify a time interval after which the inflatable lapbelt may not impede rapid egress. Ten seconds has been chosen as a reasonable time since this corresponds to the maximum time allowed for an exit to be openable. In actuality, it is unlikely that an exit would be prepared this quickly in an accident severe enough to warrant deployment of the inflatable lapbelt, and the inflatable lapbelt will likely deflate much quicker than ten seconds.

Type Certification Basis

Under the provisions of 14 CFR 21.101, Am-Safe, Inc. must show that the Model 767–300 series airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A1NM or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the ''original type certification basis.'' The regulations incorporated by reference in Type Certificate No. A1NM are as follows: Amendments 25–1 through 25–45 with exceptions. The U.S. type certification basis for the Model 767–300 is established in accordance with 14 CFR 21.29 and 21.17 and the type certification application date. The U.S. type certification basis is listed in Type Certificate Data Sheet No. A1NM.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 25 as amended) do not contain adequate or appropriate safety standards for the Boeing Model 767–300 series airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Boeing Model 767–300 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

Special conditions, as appropriate, are issued in accordance with 14 CFR 11.49 after public notice, as required by 14 CFR 11.28 and 11.29(b), and become part of the type certification basis in accordance with 14 CFR 21.101(b)(2).

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, the special conditions would also apply to the other model under the provisions of 21.101(a)(1).

Novel or Unusual Design Features

The Model 767–300 series airplanes will incorporate the following novel or unusual design features: Am-Safe, Inc. is proposing to install an inflatable lapbelt on certain seats of Boeing Model 767–300 series airplanes, in order to reduce the potential for head injury in the event of an accident. The inflatable lapbelt works similarly to a fixed mounted airbag, except that the airbag is integrated with the lap belt of the restraint system.

The CFR states the performance criteria for head injury protection in objective terms. However, none of these criteria are adequate to address the specific issues raised concerning seats with inflatable lapbelts. The FAA has therefore determined that, in addition to the requirements of 14 CFR part 25, special conditions are needed to address requirements particular to installation of seats with inflatable lapbelts.

Accordingly, in addition to the passenger injury criteria specified in 14 CFR 25.785, these special conditions are adopted for the Boeing Model 767–300 series airplanes equipped with inflatable lapbelts. Other conditions may be developed, as needed, based on further FAA review and discussions with the manufacturer and civil aviation authorities.

Discussion

From the standpoint of a passenger safety system, the airbag is unique in that it is both an active and entirely autonomous device. While the automotive industry has good experience with airbags, the conditions of use and reliance on the airbag as the sole means of injury protection are quite different. In automobile installations, the airbag is a supplemental system and works in conjunction with an upper torso restraint. In addition, the crash event is more definable and of typically shorter duration, which can simplify the activation logic. The airplane-operating environment is also quite different from automobiles and includes the potential for greater wear and tear, and unanticipated abuse conditions (due to galley loading, passenger baggage, etc.);

airplanes also operate where exposure to high intensity electromagnetic fields could affect the activation system.

The following special conditions can be characterized as addressing either the safety performance of the system, or the system's integrity against inadvertent activation. Because a crash requiring use of the airbags is a relatively rare event, and because the consequences of an inadvertent activation are potentially quite severe, these latter requirements are probably the more rigorous from a design standpoint.

Discussion of Comments

Notice of proposed special conditions, Notice No. 25–99–03–SC, for the Boeing Model 767–300 series airplanes; equipped with inflatable lapbelts was published in the **Federal Register** on May 13, 1999 (64 FR 2581). Eight commenters responded to the Notice.

Six commenters addressed special condition #1, concerning the range of occupants and conditions of occupancy that must be considered when qualifying the inflatable lapbelt. One commenter felt that pregnant women should be added to the occupants considered. Other commenters stated that the range of occupant statures specified was not substantiated, and that there were existing accepted ranges that were applicable to this installation that should be used. Some commenters inferred from the wording of condition #1 that ''consideration'' of the scenarios specified meant that occupant protection must be demonstrated for those scenarios. Another commenter pointed out that occupant stature was very important to the performance of the inflatable lapbelt, considering that the occupant's lap and lower limbs were likely to provide the bearing surface for the airbag. A commenter also noted that, once deployed, the airbag will absorb energy based upon its size, pressure and vent area, and to require a ''consistent'' level of energy absorption for all occupant sizes is virtually impossible.

After further consideration, the FAA has concluded that the established range of occupant stature, inclusive of the ninety-fifth percentile male is sufficient to address the performance of the inflatable lapbelt. Consideration of larger occupants, while desirable, is not specifically unique to this installation, and therefore should not be made an additional criterion by special condition. The FAA does, however, continue to maintain that small children should be accommodated by the inflatable lapbelt, and should not be subject to any hazards associated with its deployment. There were no adverse comments to this aspect of the proposal.

With respect to consideration of occupancy conditions given in conditions #1.a., b., and c., it was not the FAA's intent that the lapbelt be shown to accommodate all of these conditions. The intent of the condition was to cause each case to be addressed, and either demonstrated to be acceptable, or prohibited from occurring by operational limitations. Thus, if the inflatable lapbelt cannot accommodate a child restraint device, it would be acceptable to prohibit use of child restraint devices in seats so equipped. The same is true for the other conditions.

With respect to the requirement that the inflatable lapbelt provide a ''consistent level of energy absorption'' the FAA agrees that the amount of energy absorbed is dependent on the amount of energy input, and that will vary according to occupant size. The use of the word consistent may be confusing in this case. The intent of the requirement is to ensure that the range of occupants under consideration is presented with a consistent approach to injury protection, such that all occupants are afforded protection by the same mechanisms. This requirement has the effect of both establishing a consistent approach to injury protection for the range of occupants, as well as permitting demonstration with the fiftieth percentile anthropomorphic test dummy (ATD) to show compliance for the extremes of the ranges.

With respect to pregnant women, the FAA agrees that there should be some instruction provided regarding use of the seat with an inflatable lapbelt. This requirement is added as condition #1.d., which would enable the applicant to either demonstrate or restrict such occupancy.

It is clear that the performance of the inflatable lapbelt will depend to a large extent on the bearing surface, whether it is the person occupying the seat themselves or it is the airplane interior structure. The FAA considers this to be part of the basic qualification of the system, and however the system performs, it must be shown to do so reliably and consistently for the range of occupants.

Two commenters addressed condition #2 regarding the number of seated occupants to be considered. Both commenters stated that the wording of the condition implies that the buckles must have switches, and that a buckle is required for firing. Both commenters request clarification of the term ''adequate protection''. One commenter suggested alternative wording.

In this case, the design incorporates switches in the buckle assembly, and so the special condition addresses that design. Other designs might be addressed differently, but the main issue is to consider the effect on occupants of a partially occupied seat assembly, if all of the airbags activate. In that instance, the inflatable lapbelt should still perform its safety function for each occupant, and there should be no hazard (either as a result of the deployment, or to egress) from inflatable lapbelts that might activate in unoccupied seat places. In order to account for possible design changes, the wording is adjusted slightly to remove the word ''buckled'' and simply state that the unoccupied seats may have ''active'' inflatable lapbelts.

One commenter stated that condition #3 is subjective, and the stiffness of the belt should suffice to satisfy the requirement. Another commenter pointed out that a person could properly fasten the belt, and then twist the whole assembly so as to invert the buckle with respect to its proper position. The same commenter also noted that a loosely fastened belt should be considered.

The intent of this requirement is to make improper use of the belt unlikely. While there may be some subjectivity in this determination, there are practical design measures that will effectively eliminate the chance that a person would inadvertently misuse the lapbelt. The situation where a person deliberately inverts the buckle is different, and the intent of the special condition was not to account for such situations. Nonetheless, the measures taken to address inadvertent misuse will also likely be effective in preventing or minimizing deliberate misuse. With respect to a loosely fastened belt, this is something that no doubt occurs on standard seatbelts and reduces their effectiveness. The FAA agrees that a loosely fastened belt should not result in any greater risk to the occupant than on a standard belt, but cannot require that the inflatable belt be demonstrated to perform as well in this condition as when it is properly fastened. This provision is added to condition #5, which addresses occupants in the brace position.

Four commenters felt that the requirement of condition #4 was vague, and that ''wear and tear'' needed further definition. Some commenters felt that this requirement could be linked to inspection and instructions for continued airworthiness, which are required anyway. One commenter indicated that the condition is directed at pyrotechnic devices, which may not be typical.

The FAA agrees that the term ''wear and tear'' is not particularly specific,

and this was intentional. Depending on where certain components of the system are installed, their susceptibility to in-service wear and tear will vary. It is the intent of this requirement that the inflatable lapbelt will not deploy as a result of foreseeable in-service conditions, including interaction with passengers, if applicable, use of service carts, if applicable, and so on. There are regulatory requirements for instructions for continued airworthiness, which continue to apply and are not a substitute for these special conditions. The device in question is pyrotechnically activated and, therefore, this condition was written with that in mind. Other designs that might require a different condition, or might not require a similar consideration, are not the subject of this special condition. No change is made to the special condition.

Four commenters felt that the requirement of condition #5 was impractical as stated, since no injury severity level was specified. One commenter pointed out that a bruise could be considered an injury under the current wording, and would therefore make the inflatable lapbelt unacceptable. Commenters point out that a person sitting in a fully compliant standard seat is likely to suffer some injuries as a result of an accident of the severity addressed by the regulations, and that the requirement should be that their ability to egress the airplane not be adversely affected.

The FAA agrees that the proposed wording could have unintended consequences. The intent of the requirement is to prevent the introduction of injury mechanisms that did not exist previously, or would not be present on a seat that complied with the regulations directly. In this regard, injuries that would affect rapid egress are certainly of concern. However, there could be other injury mechanisms that might not have a direct impact on rapid egress, but could still be debilitating. In order to clarify the requirement, the wording is changed to require that the inflatable lapbelt not introduce injury mechanisms and that rapid egress not be affected.

Three commenters addressed the issue of brace position. Comments concerned establishing what is an acceptable brace position and on what basis an injury assessment should be made.

For the purposes of this special condition, the brace position is considered to be that shown on the operators' safety information card. The FAA does not expect that different approaches to the brace positions are feasible for seats with and without the inflatable lapbelt (for example considering the seated, upright position as the ''brace'' position for these seats). It is recognized that the current approach to brace position does result in a different position for seats that are closely spaced, versus those that aren't. In both of those cases, however, the approach is to assume a position bending as far forward as possible. Considering the modifications made to condition #5, this requirement will be combined with that one as a consideration to be addressed when determining injury potential. (Note: The special conditions are renumbered due to the combining of Notice conditions #5 and #6).

There was one comment regarding condition #6 (condition #7 of Notice), the need to demonstrate that inadvertent deployment that could cause injury to a sitting or standing person is improbable (10^{-5}/flt-hour). The commenter felt that this requirement could be open-ended unless inadvertent deployment was shown to be extremely improbable (10^{-9}/flt-hour). The FAA does not agree. Demonstration of reliability at the improbable level is sufficient to satisfy the objective of the requirement.

Two commenters addressed the requirement that an inadvertent deployment that could cause a hazard to continued safe flight and landing be extremely improbable. Both commenters agree with the requirement, however, one commenter believes it is unnecessary, since the commenter feels the inflatable lapbelt cannot cause such a hazard. While the FAA agrees that the design as it is currently understood is unlikely to constitute a direct hazard to safe flight, this requirement is fundamental to the acceptability of such a system. Thus, while the system may, in practice, not constitute a hazard, the possibility cannot be ruled out, and criteria are needed in that event.

Four commenters questioned the proposed requirement addressing impediment to rapid egress. One commenter stated that some ground rules are necessary to make an objective assessment. Another commenter questioned the origin of the 10 second standard proposed, and whether that standard applied equally to accidents that consisted of single and multiple impacts. One commenter stated that the deflated airbag should also be considered. Another commenter noted that the deflation of the airbag is dependent on vent size and the impact occuring to the bag itself. If there is no impact, the bag will vent naturally, and typically more slowly than if it were impacted.

The requirement as written was intended to address both the inflated and deflated conditions, as well as a representative accident scenario, from initial impact until the airplane comes to rest. The reason that a specific time interval was chosen was in consideration of the fact that an evacuation cannot take place simultaneously with the accident. The 10 second interval was established based on FAA review of both test and accident data concerning the time from impact until an airplane comes to rest, coupled with the time needed to prepare exits and escape slides for evacuation. Therefore, 10 seconds after the device deploys, it should not impede rapid egress of occupants. This includes occupants of seats adjacent to deployed devices, as well as occupants of the seat in which the device deploys. No change is made to this provision.

One commenter questioned the need to address lightning and high intensity radiated fields (HIRF), considering the potential hazard. The FAA regards this as a necessary requirement since the failure to address it potentially increases the hazards present. If the inflatable lapbelt were not protected from HIRF and lightning effects the potential for inadvertent deployment increases dramatically, and the associated risk would increase accordingly. Therefore, the requirement remains as written.

One commenter noted that, in the preamble discussion regarding condition #10 (condition #11 of Notice), a transverse separation occurring at the location of the inflatable lapbelt is excluded from consideration. The commenter suggests that this provision be included in condition #10 (condition #11 of Notice) itself. This has been done.

Two commenters believe that condition #11 (condition #12 of Notice) is too vague, and that no standards are provided to determine what constitutes a ''hazardous quantity'' of gas. One commenter questions whether the hazard extends to the effect on visibility from release of any gases.

This requirement was left intentionally general, since there are so many different approaches to inflation systems and the gases used. Since the bag is vented to the cabin, it is assumed that occupants will be exposed to the gases used. To large extent, then, this requirement will dictate the gases that are used. The FAA considers it appropriate to allow the applicant to demonstrate that that the gases released do not pose a safety hazard, and there are several options for doing this. There was no intent to address visibility as part of this condition, although it theoretically could be an issue as part of

condition #8 (condition #9 of Notice). This isn't expected to be the case, however.

Two commenters responded to the requirement that the inflatable lapbelt be protected from the effects of fire. Both commenters agree with the intent of the requirement. One commenter proposes alternative wording to clarify that the effects of the fire are applicable to the most critical component of the system, and the other commenter proposes that the standards currently used for chemical oxygen generators should be adequate.

Again, this requirement was intentionally general, since the system design and installation will dictate the fire threat, as well as the consequences of the threat. For example, an installation that isolated any pyrotechnic devices or pressure vessels from the occupants might not be as critical as one where those items are inside the passenger cabin. In terms of the standards to be used, there are existing standards for pressure vessels, gas generators and other components that could be applied to this device/installation. The FAA expects the applicant to propose standards that are applicable in this case.

There was one comment regarding the provisions of condition #13 (condition #14 of Notice). This condition requires that there be means to enable a crewmember to determine whether the system is operable, or that the system has been shown to be reliable over a specified inspection interval. The commenter notes that readiness indicators can add complexity to the system and actually reduce reliability. The commenter clarifies the understanding that an inspection interval based on reliability data is an acceptable method of compliance.

As noted above, the special condition allows more than one method of verifying system integrity. Either of the approaches is acceptable, but the FAA considers it necessary to minimize the possibility that the system could experience an undetected failure.

One commenter had several general comments regarding the wisdom of incorporating such a device on an airplane, considering the potential for inadvertent deployments or misuse, versus the probability of having an accident in the first place. The commenter contends that the risk of the former outweighs the risk of the latter. The FAA agrees that this could be an issue, considering the very low accident rate, however, this is one of the main issues of the special conditions. The special conditions are written to prevent the inadvertent deployments or show that such deployments are not a hazard. If the special conditions are met, the FAA considers that this is not an issue.

Applicability

As discussed above, these special conditions are applicable to the Model 767–300 series airplanes. Should Am-Safe, Inc. apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A1NM to incorporate the same novel or unusual design feature, the special conditions would apply to that model as well under the provisions of 21.101(a)(1).

Conclusion

This action affects only certain novel or unusual design features on the Boeing Model 767–300 series airplanes. It is not a rule of general applicability, and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

List of Subjects in 14 CFR Part 25

Air transportation, Aircraft, Aviation safety, Safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Boeing Model 767–300 series airplanes modified by Am-Safe, Inc. by installing inflatable lapbelts.

1. *Seats With Inflatable Lapbelts.* It must be shown that the inflatable lapbelt will deploy and provide protection under crash conditions where it is necessary to prevent serious head injury. The means of protection must take into consideration a range of stature from a two-year-old child to a ninety-fifth percentile male. The inflatable lapbelt must provide a consistent approach to energy absorption throughout that range. In addition, the following situations must be considered:

a. The seat occupant is holding an infant.

b. The seat occupant is a child in a child restraint device.

c. The seat occupant is a child not using a child restraint device.

d. The seat occupant is a pregnant woman.

2. The inflatable lapbelt must provide adequate protection for each occupant regardless of the number of occupants of the seat assembly, considering that unoccupied seats may have active seatbelts.

3. The design must prevent the inflatable lapbelt from being either incorrectly buckled or incorrectly installed such that the airbag would not properly deploy. Alternatively, it must be shown that such deployment is not hazardous to the occupant, and will provide the required head injury protection.

4. It must be shown that the inflatable lapbelt system is not susceptible to inadvertent deployment as a result of wear and tear, or inertial loads resulting from in-flight or ground maneuvers (including gusts and hard landings), likely to be experienced in service.

5. Deployment of the inflatable lapbelt must not introduce injury mechanisms to the seated occupant, or result in injuries that could impede rapid egress. This assessment should include an occupant who is in the brace position when it deploys and occupants whose belt is loosely fastened.

6. It must be shown that an inadvertent deployment, that could cause injury to a standing or sitting person, is improbable.

7. It must be shown that inadvertent deployment of the inflatable lapbelt, during the most critical part of the flight, will either not cause a hazard to the airplane or is extremely improbable.

8. It must be shown that the inflatable lapbelt will not impede rapid egress of occupants 10 seconds after its deployment.

9. The system must be protected from lightning and HIRF. The threats specified in Special Condition No. 25–ANM–18 are incorporated by reference for the purpose of measuring lightning and HIRF protection. For the purposes of complying with HIRF requirements, the inflatable lapbelt system is considered a ''critical system'' if its deployment could have a hazardous effect on the airplane; otherwise it is considered an ''essential'' system.

10. The inflatable lapbelt must function properly after loss of normal aircraft electrical power, and after a transverse separation of the fuselage at the most critical location. A separation at the location of the lapbelt does not have to be considered.

11. It must be shown that the inflatable lapbelt will not release hazardous quantities of gas or particulate matter into the cabin.

12. The inflatable lapbelt installation must be protected from the effects of fire such that no hazard to occupants will result.

13. There must be a means for a crewmember to verify the integrity of

the inflatable lapbelt activation system prior to each flight or it must be demonstrated to reliably operate between inspection intervals.

Issued in Renton, Washington, on September 15, 1999.

Vi L. Lipski,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service, ANM–100.

[FR Doc. 99–24792 Filed 9–22–99; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 99–ASW–11]

Revision of Class E Airspace; Raton, NM

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Direct final rule; confirmation of effective date.

SUMMARY: This notice confirms the effective date of a direct final rule which revises Class E airspace at Raton, NM.

EFFECTIVE DATE: The direct final rule published at 64 FR 38822 is effective 0901 UTC, November 4, 1999.

FOR FURTHER INFORMATION CONTACT: Donald J. Day, Airspace Branch, Air Traffic Division, Southwest Region, Federal Aviation Administration, Fort Worth, TX 76193–0520, telephone: 817–222–5793.

SUPPLEMENTARY INFORMATION: The FAA published this direct final rule with a request for comments in the **Federal Register** on July 20, 1999, (64 FR 38822). The FAA uses the direct final rulemaking procedure for a noncontroversial rule where the FAA believes that there will be no adverse public comment. This direct final rule advised the public that no adverse comments were anticipated, and that unless a written adverse comment, or a written notice of intent to submit such an adverse comment, were received within the comment period, the regulation would become effective on November 4, 1999. No adverse comments were received, and, thus, this action confirms that this direct final rule will be effective on that date.

Issued in Fort Worth, TX, on September 14, 1999.

Robert N. Stevens,

Acting Manager, Air Traffic Division, Southwest Region.

[FR Doc. 99–24650 Filed 9–22–99; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 99–ASW–14]

Revision of Class E Airspace; Center, TX

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Direct final rule; confirmation of effective date.

SUMMARY: This notice confirms the effective date of a direct final rule which revises Class E airspace at Center, TX.

EFFECTIVE DATE: The direct final rule published at 64 FR 39012 is effective 0901 UTC, November 4, 1999.

FOR FURTHER INFORMATION CONTACT: Donald J. Day, Airspace Branch, Air Traffic Division, Southwest Region, Federal Aviation Administration, Fort Worth, TX 76193–0520, telephone: 817–222–5793.

SUPPLEMENTARY INFORMATION: The FAA published this direct final rule with a request for comments in the **Federal Register** on July 21, 1999, (64 FR 39012). The FAA uses the direct final rulemaking procedure for a noncontroversial rule where the FAA believes that there will be no adverse public comment. This direct final rule advised the public that no adverse comments were anticipated, and that unless a written adverse comment, or a written notice of intent to submit such an adverse comment, were received within the comment period, the regulation would become effective on November 4, 1999. No adverse comments were received, and, thus, this action confirms that this direct final rule will be effective on that date.

Issued in Fort Worth, TX, on September 14, 1999.

Robert N. Stevens,

Acting Manager, Air Traffic Division, Southwest Region.

[FR Doc. 99–24649 Filed 9–22–99; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 99–ASW–15]

Revision of Class E Airspace; Perry, OK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Direct final rule; confirmation of effective date.

SUMMARY: This notice confirms the effective date of a direct final rule which revises Class E airspace at Perry, OK.

EFFECTIVE DATE: The direct final rule published at 64 FR 39011 is effective 0901 UTC, November 4, 1999.

FOR FURTHER INFORMATION CONTACT: Donald J. Day, Airspace Branch, Air Traffic Division, Southwest Region, Federal Aviation Administration, Fort Worth, TX 76193–0520, telephone: 817–222–5793.

SUPPLEMENTARY INFORMATION: The FAA published this direct final rule with a request for comments in the **Federal Register** on July 21, 1999, (64 FR 39011). The FAA uses the direct final rulemaking procedure for a noncontroversial rule where the FAA believes that there will be no adverse public comment. This direct final rule advised the public that no adverse comments were anticipated, and that unless a written adverse comment, or a written notice of intent to submit such an adverse comment, were received within the comment period, the regulation would become effective on November 4, 1999. No adverse comments were received, and, thus, this action confirms that this direct final rule will be effective on that date.

Issued in Fort Worth, TX, on September 14, 1999.

Robert N. Stevens,

Acting Manager, Air Traffic Division, Southwest Region.

[FR Doc. 99–24648 Filed 9–22–99; 8:45 am]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 91

Noise Transition Regulations; Approach of Final Compliance Date

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of approach of final compliance date.

SUMMARY: This document serves as a reminder to operators of all jet airplanes over 75,000 pounds of the limits on these airplanes after the final compliance date, December 31, 1999. This document is intended to assist operators of these airplanes in planning their actions toward complete compliance with the upcoming prohibition on operations of Stage 2