The Special Conditions

■ Accordingly, pursuant to the authority delegated to me by the Administrator, the following special condition is issued as part of the type certification basis for the Airbus A380–800 airplane.

In addition to the requirements of §§ 25.561, 25.562, 25.721, and 25.785, the following special condition applies:

It must be demonstrated that the Model A380 provides a level of crash survivability equivalent to that of conventional large transport airplanes. This may be achieved by demonstrating by test or validated analysis that—at impacts up to a vertical descent rate representing the Limit of Reasonable Survivability—the structural capability of typical fuselage sections is equal to or better than that of a conventional large transport airplane. (The Limit of Reasonable Survivability is defined as the level of structural degradation that would either directly or by exceedance of physiological limits of the occupants lead to a significant reduction in the probability of survival in an otherwise survivable incident.) The results of this demonstration must show the following:

a. Structural deformation will not result in infringement of the occupants' normal living space.

b. The occupants will be protected from the release of seats, overhead bins, and other items of mass due to structural deformation of the supporting structure. That is, the supporting structure must be able to support the loads imposed by these items of mass, assuming that they remain attached during the impact event, and the floor structure must deform in a way that would allow them to remain attached. However, the attachments of these items need not be designed for static emergency landing loads in excess of those specified in § 25.561.

c. The Dynamic Response Index experienced by the occupants will not be more severe than that experienced on conventional large transport airplanes. (The Dynamic Response Index is described in USAA VSCOM TR 89–D–22B, ''Aircraft Crash Survival Design Guide, Volume II, Aircraft Design Crash Impact Conditions and Human Tolerance.'')

d. Cargo loading of the fuselage for this evaluation accounts for variations that could have a deleterious effect on structural performance.

Issued in Renton, Washington, on July 24, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6–13796 Filed 8–18–06; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM341; Special Conditions No. 25–324–SC]

Special Conditions: Airbus Model A380–800 Airplane, Loading Conditions for Multi-leg Landing Gear

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Airbus A380–800 airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. Many of these novel or unusual design features are associated with the complex systems and the configuration of the airplane, including its full-length double deck. For these design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards regarding loading conditions for multi-leg landing gear. 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. Additional special conditions will be issued for other novel or unusual design features of the Airbus Model A380–800 airplane.

DATES: *Effective Date:* The effective date of these special conditions is July 20, 2006.

FOR FURTHER INFORMATION CONTACT: Holly Thorson, FAA, International Branch, ANM–116, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–1357; facsimile (425) 227–1149.

SUPPLEMENTARY INFORMATION:

Background

Airbus applied for FAA certification/validation of the provisionally-designated Model A3XX–100 in its letter AI/L 810.0223/98, dated August 12, 1998, to the FAA. Application for certification by the Joint Aviation Authorities (JAA) of Europe had been made on January 16, 1998, reference AI/L 810.0019/98. In its letter to the FAA, Airbus requested an extension to the 5-year period for type certification in accordance with 14 CFR 21.17(c). The request was for an extension to a 7-year period, using the date of the initial application letter to the JAA as the reference date. The reason given by Airbus for the request for extension is related to the technical challenges, complexity, and the number of new and novel features on the airplane. On November 12, 1998, the Manager, Aircraft Engineering Division, AIR–100, granted Airbus' request for the 7-year period, based on the date of application to the JAA.

In its letter AI/LE–A 828.0040/99 Issue 3, dated July 20, 2001, Airbus stated that its target date for type certification of the Model A380–800 had been moved from May 2005, to January 2006, to match the delivery date of the first production airplane. In a subsequent letter (AI/L 810.0223/98 Issue 3, dated January 27, 2006), Airbus stated that its target date for type certification is October 2, 2006. In accordance with 14 CFR 21.17(d)(2), Airbus chose a new application date of December 20, 1999, and requested that the 7-year certification period which had already been approved be continued. The FAA has reviewed the part 25 certification basis for the Model A380–800 airplane, and no changes are required based on the new application date.

The Model A380–800 airplane will be an all-new, four-engine jet transport airplane with a full double-deck, two-aisle cabin. The maximum takeoff weight will be 1.235 million pounds with a typical three-class layout of 555 passengers.

Type Certification Basis

Under the provisions of 14 CFR 21.17, Airbus must show that the Model A380–800 airplane meets the applicable provisions of 14 CFR part 25, as amended by Amendments 25–1 through 25–98. If the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the Airbus A380–800 airplane because of novel or unusual design features, special conditions are prescribed under the provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Airbus Model A380–800 airplane 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. In addition, the FAA must issue a finding of regulatory adequacy pursuant to section 611 of Public Law 93–574, the ''Noise Control Act of 1972.''

Special conditions, as defined in 14 CFR 11.19, are issued in accordance with 14 CFR 11.38 and become part of the type certification basis in accordance with 14 CFR 21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, the special conditions would also apply to the other model under the provisions of 14 CFR 21.101.

Discussion of Novel or Unusual Design Features

The A380 has a multi-leg landing gear arrangement consisting of a nose gear, two wing mounted gear, and two body mounted gear. This arrangement is different from the simpler, conventional landing gear arrangement envisioned by the landing and ground load requirements of 14 CFR part 25. Those regulations assume a landing gear arrangement comprising a three point suspension system (two main gear and a nose or tail gear) in which load sharing between the landing gear can be determined without considering the flexibility of the airframe. In fact, § 25.477 states that certain Ground Load provisions apply only to ''airplanes with conventional arrangements of main and nose gears, or main and tail gears, when normal operating techniques are used.''

For a five point suspension system, like that of the A380, load sharing between landing gear must be determined in a rational manner considering the flexibility of the airplane. Therefore, the landing and ground load requirements of 14 CFR part 25 are not valid, and special conditions specifying the load conditions appropriate to the multi-leg landing gear on the A380 are necessary.

Proposed regulatory changes pertaining to landing and ground handling structural design loads have been developed by a working group of the Aviation Rulemaking and Advisory Committee (ARAC). The proposal, dated May 30, 2003, provides design load requirements for various landing gear configurations, including the multi-leg landing gear configuration of the A380.

The special conditions in this document are based upon the regulatory changes proposed by the ARAC working group, as are the special conditions issued by the European Aviation Safety Agency for its certification of the A380. For ease of reference, the special conditions in this document are organized in the same manner as in the ARAC recommendation. Since the changes proposed by ARAC cover various landing gear configurations, certain paragraphs of the proposal are not applicable to the A380. These paragraphs are so indicated in the section of these Final Special Conditions entitled ''The Special Conditions.''

This document contains two groups of special conditions. The first group (Group A) addresses Landing Conditions and includes special conditions pertaining to the following:

A.1. Landing load conditions and assumptions,
A.2. Symmetric landing load conditions,
A.3. One-gear landing conditions, and
A.4. Side load conditions.

The second group (Group B) addresses other conditions and tests, including Ground Handling Conditions. It includes special conditions pertaining to the following:

B.1. Ground handling conditions,
B.2. Taxi, takeoff and landing roll,
B.3. Braked roll conditions,
B.4. Nose-wheel yaw and steering,
B.5. Pivoting,
B 6. Reversed braking,
B.7. Ground load: unsymmetrical loads on multiple-wheel units, and
B.8. Shock absorption tests.

Discussion of Comments

Notice of Proposed Special Conditions No. 25–06–02–SC, pertaining to loading conditions for multi-leg landing gear for the Airbus A380 airplane, was published in the **Federal Register** on March 23, 2006 (71 FR 15345). A single comment which supports the intent and the language of the special condition, as proposed, was received from the Airline Pilots Association (ALPA). The FAA made a slight change to the text of Special Condition B.5.(b)(1)(ii) to clarify that 4 different pivoting conditions must be considered. Except for that change, the special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions are applicable to the Airbus A380–800 airplane. Should Airbus apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design features, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features of the Airbus A380–800 airplane. It is not a rule of general applicability.

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 the Airbus A380–800 airplane.

A. Landing Conditions

1. Landing Load Conditions and Assumptions

In lieu of §§ 25.473and 25.477, the following special conditions apply:

(a) The landing gear and airplane structure must be investigated for the landing conditions specified in Special Conditions A.2., A.3., and A.4. For these conditions, the airplane is assumed to contact the ground

(1) In the attitudes defined in Special Conditions A.2. and A.3.

(2) At the descent velocities defined in Special Conditions A.2. and A.3. The prescribed descent velocities may be modified, if it is shown that the airplane has design features that make it impossible to develop these velocities.

(b) Airplane lift, not exceeding airplane weight, may be assumed, unless the presence of systems or procedures significantly affects the lift.

(c) The method of analysis of airplane and landing gear loads must take into account at least the following elements:

(1) Landing gear dynamic characteristics.

(2) Spin-up and spring back.

(3) Rigid body response.

(4) Structural dynamic response of the airframe, if significant.

(5) Each approved tire with nominal characteristics.

(d) The landing gear dynamic characteristics must be validated by tests as defined in Special Condition B.8., paragraph (a).

(e) The coefficient of friction between the tires and the ground may be established by considering the effects of skidding velocity and tire pressure. However, this coefficient of friction need not be more than 0.8.

2. Symmetric Landing Load Conditions

In lieu of §§ 25.479 and 25.481, the following special conditions apply:

The landing gear and airframe structure must be designed for the dynamic landing conditions of Special Condition A.2., using the assumptions specified in Special Condition A.1.

(a) The airplane is assumed to contact the ground—

(1) With an airspeed corresponding to the attitudes specified in paragraph (c) of this special condition in the following conditions: (i) standard sea level conditions, and (ii) at maximum approved altitude in a hot day temperature of 22.8 °C (41°F) above standard.

The airspeed need not be greater than $1.25V_{S0}$, or less than V_{S0}, where V_{S0} = the 1-g stalling speed based on C_{NAmax} at the appropriate weight and in the landing configuration. The effects of increased ground contact speeds must be investigated to account for downwind landings for which approval is desired.

(2) With a limit descent velocity of 3.05 m/sec (10 fps) at the design landing weight (the maximum weight for landing conditions at maximum descent velocity); and,

(3) With a limit descent velocity of 1.83 m/sec (6 fps) at the design takeoff weight (the maximum weight for landing conditions at a reduced descent velocity).

(b) *Not applicable to A380.*

(c) For airplanes with nose wheels, the conditions specified in this paragraph must be investigated assuming the following attitudes:

(1) An attitude in which the nose and main wheels are assumed to contact the ground simultaneously, as shown in 14 CFR part 25, Appendix A, Figure 2. For this condition, airplane pitching moment is assumed to be reacted by the nose gear.

(2) An attitude corresponding to the smallest pitch attitude at which the main landing gear reach maximum vertical compression before impact on the nose gear.

(3) An attitude corresponding to either the stalling angle or the maximum angle allowing clearance with the ground by each part of the airplane other than any wheel of the main landing gear, in accordance with 14 CFR part 25, Appendix A, Figure 3, whichever is less.

(4) For aircraft with more than two main landing gear or more than two wheels per main landing gear unit, each intermediate attitude that may be critical.

(d) For airplanes with more than two main landing gear, landing must be considered on a level runway and, as a separate condition, on a runway having a convex upward shape that may be approximated by a slope of 1.5% at main landing gear stations.

3. One-gear Landing Conditions

In lieu of § 25.483, the following special condition applies:

(a) Not applicable to the A380.

(b) For airplanes with more than two main landing gear, a dynamic rolled landing condition on a level runway must be considered, using the assumptions specified in Special Condition A.1., in which—

(1) The airplane is assumed to contact the ground—

(i) At the maximum roll angle attainable within the geometric limitations of the airplane; (however, the roll angle need not exceed 10 degrees),

(ii) With a limit descent velocity of 2.13 m/sec (7 fps) at the design landing weight,

(iii) At the critical pitch attitudes and corresponding contact velocities obtained under Special Conditions No. A.2.

(2) The dynamic analysis must include the contact of all gear outboard of the airplane centerline on the side of first gear impact. This condition need not apply to the gear on the opposite side of the airplane.

(3) Side loads (in the ground reference system) may be assumed to be zero.

(4) Airplane rolling moments shall be reacted by airplane inertia forces and by subsequent main gear reactions.

4. Side Load Conditions

In lieu of § 25.485, the following special conditions apply:

For the side load conditions specified in paragraphs (a) and (b) below, the vertical and drag loads are assumed to act at the wheel axle centerline, and the side loads are assumed to act at the ground contact point. The gear loads are balanced by inertia of the airplane.

(a) The most severe combination of loads that are likely to arise during a lateral drift landing must be taken into account. In the absence of a more rational analysis of this condition, the following must be investigated:

(1) A separate condition for each gear, for which the vertical load is assumed to be 75% of the maximum vertical reaction obtained in Special Condition A.2. or A.3., whichever is greater. For airplanes with more than two main landing gear, the vertical load on the other gear is assumed to be 75% of the correlated vertical load for those gear in the same condition. The vertical loads for each gear are combined with drag and side loads of 40% and 25%, respectively, of the vertical load.

(2) The airplane is assumed to be in the attitude corresponding to the maximum vertical reaction obtained in Special Condition A.2 or A.3., whichever is greater.

(3) The shock absorber and tire deflections must be assumed to be 75% of the deflection corresponding to the vertical loads obtained in Special Condition A.2., whichever is greater.

(b) In addition to the side load conditions specified in paragraph (a) above, the following side load conditions must be considered for each main landing gear unit:

(1) A separate condition for each main landing gear unit, for which the vertical load is assumed to be 50% of the maximum vertical reaction obtained in Special Condition A.2. For airplanes with more than two main gear, the vertical load on other gear is assumed to be 50% of the correlated vertical load for those gear in the same condition. The vertical loads for each gear are combined with the side loads specified in paragraph (b)(3) or (b)(4) of this special condition, as applicable.

(2) The airplane is assumed to be in the attitude corresponding to the maximum vertical reaction obtained in Special Conditions A.2.

(3) For the outboard main landing gear, side loads of 0.8 of the vertical reaction (on one side) acting inward and 0.6 of the vertical reaction (on the other side) acting outward as shown in 14 CFR part 25, Appendix A, Figure 5.

(4) For airplanes with more than two main landing gear, the side load of each inboard main landing gear is determined by a linear interpolation between 0.8 and 0.6 of the vertical gear load on that gear, depending on the lateral position of that gear relative to the outboard main landing gear. The side loads act in the same direction as the outboard main gear side loads.

(5) The drag loads may be assumed to be zero.

(6) The shock absorber and tire deflections must be assumed to be 50% of the deflection corresponding to the vertical loads of Special Conditions A.2.

B. Ground Handling Conditions

1. Ground Handling Conditions

In lieu of § 25.489, the following special conditions apply:

(a) Unless otherwise prescribed, the landing gear and airplane structure must be investigated for the conditions in § 25.509 and in Special Conditions. B.2, B.3, B.4, B.5, and B.6, as follows:

(1) The airplane must be assumed to be at the design ramp weight (the maximum weight for ground handling conditions);

(2) The airplane lift must be assumed to be zero; and

(3) The shock absorbers and tires may be assumed to be in their static position.

(b) For airplanes with more than two main landing gears, the airplane must be considered to be on a level runway and, as a separate condition, on a runway having a convex upward shape that may be approximated by a slope of 1.5% at the main landing gear stations. The ground reactions must be distributed to the individual landing gear in a rational or conservative manner.

2. Taxi, Takeoff and Landing Roll

In lieu of § 25.491, the following special condition applies:

Within the range of appropriate ground speeds and approved weights, the airplane structure and landing gear are assumed to be subjected to loads not less than those obtained when the aircraft is operating over the roughest ground that may reasonably be expected in normal operation. Steady aerodynamic effects must be considered in a rational or conservative manner.

3. Braked Roll Conditions

In lieu of § 25.493, the following special conditions apply:

(a) *Not applicable to A380.*

(b) For an airplane with a nose wheel, the limit vertical load factor is 1.2 at the design landing weight and 1.0 at the design ramp weight. A drag reaction equal to the vertical reaction, multiplied by a coefficient of friction of 0.8, must be combined with the vertical reaction and applied at the ground contact point of each wheel with brakes. The following two attitudes, in accordance with14 CFR part 25, Appendix A, Figure 6, must be considered:

(1) The level attitude with the wheels contacting the ground and the loads distributed between the main and nose gear. Zero pitching acceleration is assumed.

(2) The level attitude with only the main gear contacting the ground and with the pitching moment resisted by angular acceleration.

(c) An airplane equipped with a nose gear must be designed to withstand the loads arising from the dynamic pitching motion of the airplane due to sudden application of maximum braking force. The airplane is considered to be at design takeoff weight with the nose and main gears in contact with the ground, and with a steady-state vertical load factor of 1.0. The steady-state nose gear reaction must be combined with the maximum incremental nose gear vertical reaction caused by the sudden application of maximum braking force as described in paragraphs (b) and (e) of this paragraph.

(d) Not applicable to the A380.

(e) A drag reaction lower than that prescribed in Special Condition B.3 may be used if it is substantiated that an effective drag force of 0.8 times the vertical reaction cannot be attained under any likely loading condition.

4. Nose-wheel Yaw and Steering

In lieu of § 25.499, the following special conditions apply:

(a) A vertical load factor of 1.0 at the airplane center of gravity and a side component at the nose wheel ground contact equal to 0.8 of the vertical ground reaction at that point are assumed.

(b) With the airplane assumed to be in static equilibrium with the loads resulting from the use of brakes on one side of the main landing gear system, the nose gear, its attaching structure, and the fuselage structure forward of the center of gravity must be designed for the following loads:

(1) A vertical load factor at the center of gravity of 1.0.

(2) For wheels with brakes applied, the coefficient of friction must be 0.8. Drag loads are balanced by airplane inertia. Airplane pitching moment is reacted by the nose gear.

(3) Side and vertical loads at the ground contact point on the nose gear that are required for static equilibrium.

(4) A side load factor at the airplane center of gravity of zero.

(c) If the loads prescribed in paragraph (b) above result in a nose gear side load higher than 0.8 times the vertical nose gear load, the design nose gear side load may be limited to 0.8 times the vertical load, with unbalanced yawing moments assumed to be resisted by airplane inertia forces.

(d) For other than the nose gear, its attaching structure, and the forward fuselage structure, the loading conditions are those prescribed in paragraph (b) above, except that—

(1) A lower drag reaction may be used if an effective drag force of 0.8 times the vertical reaction cannot be reached under any likely loading condition; and

(2) The forward acting load at the center of gravity need not exceed the maximum drag reaction on the main landing gear, determined in accordance with Special Conditions B.3., paragraph (b).

(e) With the airplane at design ramp weight, and the nose gear in any steerable position, the combined application of full normal steering torque and vertical force equal to 1.33 times the maximum static reaction on the nose gear must be considered in designing the nose gear, its attaching structure, and the forward fuselage structure.

5. Pivoting

In lieu of § 25.503, the following special condition applies:

The main landing gear and supporting structure must be designed for the loads induced by pivoting during ground maneuvers in paragraph (b) below.

(a) Not applicable to A380.

(b) For airplanes with more than two main landing gear, the following pivoting conditions must be considered:

(1) The following rational pivoting maneuvers must be considered:

(i) Towing at the nose gear at the critical towing angle, no brakes applied, and separately,

(ii) Application of symmetrical and unsymmetrical forward thrust to aid pivoting, with and without braking by pilot action on the pedals, *i.e., four different pivoting conditions.*

(2) The airplane is assumed to be in static equilibrium, with the loads being applied at the ground contact points.

(3) The limit vertical load factor must be 1.0, and

(i) For wheels with brakes applied, the coefficient of friction must be 0.8.

(ii) For wheels with brakes not applied, the ground tire reactions must be based on reliable tire data.

6. Reversed Braking

In lieu of § 25.507, the following special conditions apply:

(a) The airplane must be in a static ground attitude. Horizontal reactions parallel to the ground and directed forward must be applied at the ground contact point of each wheel with brakes. The limit loads must be equal to 0.55 times the vertical load at each wheel or to the load developed by 1.2 times the nominal maximum static brake torque, whichever is less.

(b) For airplanes with nose gears, the pitching moment must be balanced by rotational inertia.

7. Ground Load: Unsymmetrical Loads on Multiple-wheel Units

In lieu of § 25.511, subparagraphs (d) and (e), the following special conditions apply:

(a) Landing conditions. For one and for two deflated tires, the applied load to each gear unit is assumed to be 60 percent and 50 percent, respectively, of the limit load applied to each gear for each of the prescribed landing conditions. However, for Special Condition A.4., paragraph (b), 100 percent of the vertical load must be applied. Special Condition A.4., paragraph (a)(3), need not be considered with deflated tires.

(b) Taxiing and ground handling conditions. For one and for two deflated tires—

(1) The applied side or drag load factor, or both factors, at the center of gravity must be the most critical value up to 50 percent and 40 percent, respectively, of the limit side or drag load factors, or both factors, corresponding to the most severe condition resulting from consideration of the prescribed taxiing and ground handling conditions;

(2) For the braked roll conditions of Special Conditions B.3., paragraph (b)(2), the drag loads on each inflated tire may not be less than those at each tire for the symmetrical load distribution with no deflated tires;

(3) The vertical load factor at the center of gravity must be 60 percent and 50 percent, respectively, of the factor with no deflated tires, except that it may not be less than 1g; and

(4) The pivoting condition of Special Condition B.5. and the braked roll conditions of Special Condition B.3., paragraph (c), need not be considered with deflated tires.

8. Shock Absorption Tests

In lieu of § 25.723, the following special conditions apply:

(a) The analytical representation of the landing gear dynamic characteristics that is used in determining the landing loads must be validated by energy absorption tests. A range of tests must be conducted to ensure that the analytical representation is valid for the design conditions specified in Special Conditions A.2. and A.3., if applicable.

(1) The configurations subjected to energy absorption tests at limit design conditions must include both the condition with the maximum energy absorbed by the landing gear and the condition with the maximum descent velocity obtained from Special Condition A.2. and A.3.

(2) The test attitude of the landing gear unit and the application of appropriate drag loads during the test must simulate the airplane landing conditions in a manner consistent with the development of rational or conservative limit loads.

(b) Each landing gear unit may not fail in a test, demonstrating its reserve energy absorption capacity, assuming—

(1) The weight and pitch attitude correspond to the condition from Special Condition A.2. that provides the maximum energy absorbed by the landing gear;

(2) Airplane lift is not greater than the airplane weight acting during the landing impact, unless the presence of systems or procedures significantly affects the lift;

(3) The test descent velocity is 120% of that corresponding to the condition specified in paragraph (b)(1) of this paragraph;

(4) The effects of wheel spin-up need not be included.

(c) In lieu of the tests prescribed in this paragraph, changes in previously approved design weights and minor changes in design may be substantiated by analyses based on previous tests conducted on the same basic landing gear system that has similar energy absorption characteristics.

Issued in Renton, Washington, on July 20, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6–13779 Filed 8–18–06; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2006–24101; Directorate Identifier 2005–NM–103–AD; Amendment 39–14718; AD 2006–16–18]

RIN 2120–AA64

Airworthiness Directives; Sandel Avionics Incorporated Model ST3400 Terrain Awareness Warning System/ Radio Magnetic Indicator (TAWS/RMI) Units Approved Under Technical Standard Order(s) C113, C151a, or C151b; Installed on Various Small and Transport Category Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD). The new AD is for Sandel Avionics Incorporated Model ST3400 TAWS/RMI units as described above. This AD requires installing a warning placard on the TAWS/RMI and revising the Limitations section of the airplane flight manual (AFM). This AD also requires installing upgraded software in the TAWS/RMI. This AD results from a report that an in-flight bearing error occurred in a Model ST3400 TAWS/RMI configured to receive bearing information from a very high frequency omnidirectional range (VOR) receiver interface via a composite video signal, due to a combination of input signal fault and software error. We are issuing this AD to prevent a bearing error, which could lead to an airplane departing from its scheduled flight path, which could result in a reduction in separation from, and a possible collision with, other aircraft or terrain.

DATES: This AD becomes effective September 25, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of September 25, 2006.

ADDRESSES: You may examine the AD docket on the Internet at *http://dms.dot.gov* or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC.

Contact Sandel Avionics Incorporated (Sandel), 2401 Dogwood Way, Vista, California 92081, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Ha A. Nguyen, Aerospace Engineer, Systems and Equipment Branch, ANM–130L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712–4137; telephone (562) 627–5335; fax (562) 627–5210.

SUPPLEMENTARY INFORMATION:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at *http://dms.dot.gov* or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647–5227) is located on the plaza level of the Nassif Building at the street address stated in the **ADDRESSES** section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to Sandel Avionics Incorporated Model ST3400 terrain awareness warning system/radio magnetic indicator (TAWS/RMI) units approved under Technical Standard Order(s) C113, C151a, or C151b; installed on various small and transport category airplanes. That NPRM was published in the **Federal Register** on March 8, 2006 (71 FR 11549). That NPRM proposed to require installing a warning placard on the TAWS/RMI, installing upgraded software in the TAWS/RMI, revising the Limitations section of the airplane flight manual (AFM), and removing the placard and AFM revision after installing the software.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.