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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

[Docket No. 97-NM-242-AD; Amendment 39-12646; AD 2002-03-05]

**RIN 2120-AA64**

### **Airworthiness Directives; McDonnell Douglas Model DC-8 Series Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model DC-8 series airplanes, that requires, among other things, repetitive leak tests of the lavatory drain systems and repair, if necessary; installation of a lever lock cap, vacuum breaker check valve, or flush/fill line ball valve on the flush/fill line; periodic seal changes; and replacement of "donut" type waste drain valves installed in the waste drain system. This amendment is prompted by continuing reports of damage to engines, airframes, and property on the ground, caused by "blue ice" that forms from leaking lavatory drain systems on transport category airplanes and subsequently dislodges from the airplane fuselage. The actions specified by this AD are intended to prevent such damage associated with the problems of "blue ice."

**DATES:** Effective March 19, 2002.

**ADDRESSES:** This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Samuel Lee, Aerospace Engineer, Airframe Branch, ANM-130L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5338; fax (562) 627-5210.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC-8 series airplanes was published in the Federal Register on July 9, 1998 (63 FR 37074). That action proposed to require among other things, repetitive leak tests of the lavatory drain systems and repair, if necessary; installation of a lever lock cap, vacuum breaker check

valve, or flush/fill line ball valve on the flush/fill line; periodic seal changes; and replacement of "donut" type waste drain valves installed in the waste drain system.

### **Comments Received**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

### **Support for the Proposed Rule**

One commenter agrees with the proposal.

### **Request To Use a Leak Check Tool**

One commenter requests that the FAA revise paragraph (a) of the proposed rule to specify that it is not necessary to pressurize the aircraft to verify the integrity of service panel drain valves if the maintenance personnel perform a leak test. The commenter states that such a revision would be consistent with other ADs. The commenter also notes that such testing of the inner seal with air in a leak test is much more stringent than testing with a liquid, as it is obviously much easier for air to leak than the lavatory fluid. The commenter also requests that the FAA revise the duration of the leak test from five minutes to one minute when testing the inner seals of service panel valves with a leak check tool that applies a vacuum from the downstream side of the valve.

The FAA does not agree that paragraph (a) of this AD should be revised for the reasons the commenter states. We note that the Shaw Aero vacuum test tool has been approved to allow testing without requiring fluid upstream of the valve. However, if specific procedures were provided for using a leak test tool, the FAA would consider a request for an alternative method of compliance in accordance with paragraph (d) of this AD. Since the commenter did not submit data that would justify a shorter interval for the vacuum test tool, we have no basis to reduce the duration of the leak test. No change is necessary to the final rule in this regard.

### **Request To Revise the Interval for Changing the Valve Seals**

One commenter requests that the interval for changing the Pneudraulics valve seals specified in paragraph (a) of the proposed rule be reduced from every 6,000 flight hours to every 5,000 flight hours. The commenter states that the design limitations, and the potential for ice, hardened debris, and "black tar" build-up on the ball at the service panel seals are much more susceptible to damage. Additionally, the commenter notes that the location of the service panel (Pneudraulics valve) relative to the in-line ball valve makes those seals or mating surfaces more susceptible to damage by service and maintenance personnel.

The FAA does not agree with the commenter's request. The 6,000-flight hour interval for changing the Pneudraulics valve seals is based on extensive operating experience. Further, we have received no adverse reports on the Pneudraulics valve seals describing those problems that were indicated by the commenter. No change to the final rule is necessary in this regard.

### **Request To Extend the Leak Check Intervals for Certain Valves**

One commenter requests that the leak test interval for Shaw Aero valves listed in Table 1 of the proposed AD be extended from every 1,000 flight hours to every 2,000 flight hours. The commenter argues that the in-service history of the Shaw Aero devices demonstrates a reliability factor that justifies such an extension.

The FAA agrees with the commenter's request, and has previously provided a similar interval extension for those valves on other "blue ice" related ADs. We have revised Table 1 of the final rule to reflect extension of the leak check interval to every 2,000 flight hours for those valves. Since the valves specified in Table 1 are now approved for an interval of 2,000 flight hours, we have removed Table 1 from paragraph (a)(4) of the NPRM that specifies approval for an interval of 1,000 flight hours, and have inserted Table 1 into paragraph (a)(3) of the final rule that specifies approval for valves with an interval of 2,000 flight hours.

### **Request To Correct Certain Part Numbers (P/Ns)**

One commenter requests that certain P/Ns listed in Table 1 of the proposed AD be corrected. The FAA concurs and has revised Table 1 of the final rule.

### **Request To Revise Economic Estimate**

This same commenter requests that the FAA add the cost of performing a leak check with the vacuum pump test tool. The commenter states that operators should be made aware that the vacuum pump test tool is more economical than pressurizing the airplane to obtain the required 3-pounds-per-square-32inch (psi) differential pressure.

The FAA does not agree that the estimated costs should be revised for the reasons the commenter states. As stated above, operators may request an alternative method of compliance for using the vacuum pump test tool by providing us with specific procedures for performing the leak test. Even though using the vacuum pump test tool may be less costly and may reduce the time required to perform the leak test, no dollar values were provided to us for comparison. No change is necessary to the final rule in this regard.

### **Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

### **Cost Impact**

There are approximately 306 Model DC-8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 229 airplanes of U.S. registry and 26 U.S. operators will be affected by this AD.

The required waste drain system leak test and outer cap inspections will take approximately 6 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact on U.S. operators of the waste drain system leak test and outer cap inspection is estimated to be \$82,440, or \$360 per airplane, per test/inspection.

Certain airplanes (i.e., those that have "donut" type drain valves installed) may be required to be leak tested as many as 15 times each year. Certain other airplanes having other valve configurations will be required to be leak tested as few as 3 times each year. Based on these figures, the cost impact of this requirement is estimated to be between \$1,080 and \$5,400 per airplane, per year.

With regard to replacement of "donut" type drain valves, the cost of a new valve is approximately \$1,200. However, the number of leakage tests for an airplane that flies an average of 3,000 flight hours a year is reduced from 15 tests to 3 tests, which essentially pays for the cost of the replacement valve, so that no additional net cost is incurred because of this change.

The FAA estimates that it will take approximately 1 work hour per airplane to accomplish a visual inspection of the service panel drain valve cap/door seal and seal mating surfaces, at an average labor rate of \$60 per work hour. As with leak tests, certain airplanes will be required to be visually inspected as many as 15 times or as few as 3 times each year. Based on these figures, the cost impact of the required repetitive visual inspections is estimated to be between \$180 and \$900 per airplane, per year.

The required installation of the flush/fill line cap will take approximately 1 work hour per cap to accomplish, at an average labor rate of \$60 per work hour. The cost of required parts will be \$275 per cap. There is an average of 2.5 caps per airplane. Based on these figures, the cost impact of these requirements on U.S. operators is estimated to be \$171,178, or \$748 per airplane.

The seal replacements of the drain valves required by paragraph (a) of this AD will take approximately 2 work hours to accomplish, at an average labor cost of \$60 per hour. The cost of required parts will be \$200 per each seal change. Based on these figures, the cost impact on U.S. operators of these requirements is estimated to be \$73,280, or \$320 per airplane, per replacement.

The number of required work hours, as indicated above, is presented as if the accomplishment of the actions required in this AD were to be conducted as "stand alone" actions. However, in actual practice, these actions could be accomplished coincidentally or in combination with normally scheduled airplane inspections and other maintenance program tasks. Therefore, the actual number of necessary "additional" work hours will be minimal in many instances. Additionally, any costs associated with special airplane scheduling should be minimal.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted.

The FAA recognizes that the obligation to maintain aircraft in an airworthy condition is vital, but sometimes expensive. Because ADs require specific actions to address specific unsafe conditions, they appear to impose costs that would not otherwise be borne by operators. However, because of the general obligation of operators to maintain aircraft in an airworthy condition, this appearance is deceptive. Attributing those costs solely to the issuance of this AD is unrealistic because, in the interest of maintaining safe aircraft, prudent operators would accomplish the required actions even if they were not required to do so by the AD.

A full cost-benefit analysis has not been accomplished for this AD. As a matter of law, in order to be airworthy, an aircraft must conform to its type design and be in a condition for safe operation. The type design is approved only after the FAA makes a determination that it complies with all applicable airworthiness requirements. In adopting and maintaining those requirements, the FAA has already made the determination that they establish a level of safety that is cost-beneficial. When the FAA, as in this AD, makes a finding of an unsafe condition, this means that the original cost-beneficial level of safety is no longer being achieved and that the required actions are necessary to restore that level of safety. Because this level of safety has already been determined to be cost-beneficial, a full cost-benefit analysis for this AD would be redundant and unnecessary.

## **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39--AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

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

### **Sec. 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

## **2002-03-05 McDonnell Douglas:** Amendment 39-12646. Docket 97-NM-242-AD.

*Applicability:* Model DC-8 series airplanes equipped with a lavatory drainage system; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

*Compliance:* Required as indicated, unless previously accomplished.

To prevent engine damage, airframe damage, and/or hazard to persons or property on the ground as a result of "blue ice" that has formed from leakage of the lavatory drain system or flush/fill system and dislodged from the airplane, accomplish the following:

(a) Accomplish the applicable requirements of paragraphs (a)(1) through (a)(9) of this AD at the time specified in each paragraph. For the waste drain system of any lavatory that incorporates more than one type of valve, only one of the waste drain system leak test procedures (the one that applies to the equipment with the longest leak test interval) must be conducted at each service panel location. During the performance of the waste drain system valve leak tests specified in this AD, fluid shall completely cover the upstream end of the valve being tested. The direction of the 3-pounds per square inch differential pressure (PSID) shall be applied in the same direction as occurs in flight; the other waste drain system valves shall be open, and the minimum time to maintain the differential pressure shall be 5 minutes. Any revision of the seal change intervals or leak test intervals must be approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate.

**Note 2:** Inclusion of a valve in this AD does not mean that the valve has been certified for installation in DC-8 series airplanes. Certification of the valve for installation in the airplane must be accomplished by means acceptable to the FAA, if the valve has not been previously certified.

(1) Replace the valve seals with new valve seals in accordance with the applicable schedule specified in paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) of this AD.

(i) For each lavatory drain system that has an in-line drain valve installed, Kaiser Electroprecision P/N series 2651-278 or 2651-357: Replace the seals within 5,000 flight hours after the effective date of this AD, or within 48 months after the last documented seal change, whichever occurs later. Thereafter, replace the seals at intervals not to exceed 48 months.

(ii) For each lavatory drain system that has a Pneudraulics part number series 9527 valve: Replace the seals within 5,000 flight hours after the effective date of this AD, or within 18 months after the last documented seal change, whichever occurs later. Thereafter, replace the seals at intervals not to exceed 18 months or 6,000 flight hours, whichever occurs later.

(iii) For each lavatory drain system that has any other type of drain valve: Replace the seals within 5,000 flight hours after the effective date of this AD, or within 18 months after the last documented seal change, whichever occurs later. Thereafter, replace the seals at intervals not to exceed 18 months.

(2) For each lavatory drain system that has an in-line drain valve installed, Kaiser Electroprecision P/N series 2651-278: Within 4,500 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 4,500 flight hours, accomplish the procedures specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Conduct a leak test of the toilet tank dump valve (in-tank valve that is spring-loaded closed and operable by a T-handle at the service panel) and the in-line drain valve. The toilet tank dump valve leak test must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5 minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The in-line drain valve leak test must be performed with a minimum of 3 PSID applied across the valve.

(ii) If a service panel valve or cap is installed, perform a visual inspection to detect wear or damage that may allow leakage of the service panel drain valve outer cap/door seal and the inner seal (if the valve has an inner door with a second positive seal), and the seal mating surfaces.

**Note 3:** For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or drop-light, and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

(3) For each lavatory drain system that has any of the following service panel drain valves installed: Pneudraulics P/N series 9527, Kaiser Electroprecision P/N 2651-357, or the Shaw Aero P/N's listed in Table 1 of this paragraph: Within 2,000 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 2,000 flight hours, accomplish the procedures specified in paragraphs (a)(3)(i) and (a)(3)(ii) of this AD. Table 1 is as follows:

**Table 1.--Shaw Aero Valves Approved for 2,000 Flight Hour Leak Test Interval**

Shaw waste drain valve part number	Serial numbers approved for 2,000-hour leak test interval
A. 331 Series and 332 Series.....	All.
B. 10101000B-A-1.....	201 and higher.
C. 10101000BA2.....	0130 and higher.
D. Certain 10101000B valves.....	Any of these "B" series valves that incorporate the improvements of Shaw Service Bulletin 10101000B-38-1, dated October 7, 1994, and are marked "SBB38-1-58".
E. 10101000C-A-1.....	0277 and higher.
F. 10101000CN OR C-N.....	3649 and higher.

G. Certain 10101000C valves.....	Any of these "C" series valves that incorporate the improvements of Shaw Service Bulletin 10101000C-38-2 dated October 7, 1994, and are marked "SBC38-2-58".
H. 10101000C-R.....	191 and higher (747-400).
I. 10101000C-G.....	Superseded by 10101000C-R (747-400).

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(i) Conduct a leak test of the toilet tank dump valve and the service panel drain valve. The toilet tank dump valve leak test must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5 minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The leak test of the service panel drain valve must be performed with a minimum of 3 PSID applied across the valve inner door/closure device.

(ii) Perform a visual inspection of the outer cap/door and seal mating surface for wear or damage that may cause leakage.

(4) For each lavatory drain system that has a service panel drain valve installed, Kaiser Electroprecision P/N series 0218-0032: Within 1,000 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 1,000 flight hours, accomplish the procedures specified in paragraphs (a)(4)(i) and (a)(4)(ii) of this AD.

(i) Conduct a leak test of the toilet tank dump valve and service panel drain valve. The toilet tank dump valve leak test must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5 minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The service panel drain valve leak test must be performed with a minimum of 3 PSID applied across the valve inner door/closure device.

(ii) Perform a visual inspection of the outer cap/door and seal mating surface for wear or damage that may cause leakage.

(5) For each lavatory drain system that has a service panel drain valve installed, Kaiser Electroprecision P/N series 0218-0026; or Shaw Aero Devices P/N series 10101000B or 10101000C (except as specified in paragraph (a)(3) of this AD): Within 600 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 600 flight hours, accomplish the procedures specified in paragraphs (a)(5)(i) and (a)(5)(ii) of this AD.

(i) Conduct a leak test of the toilet tank dump valve and the service panel drain valve. The leak test of the toilet tank dump valve must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5 minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The service panel drain valve leak test must be performed with a minimum of 3 PSID applied across the valve inner door/closure device.

(ii) Perform a visual inspection of the outer cap/door and seal mating surface for wear or damage that may cause leakage.

(6) For each lavatory drain system with a lavatory drain system valve that incorporates either "donut" plug, Kaiser Electroprecision P/Ns 4259-20 or 4259-31; Kaiser Roylyn/Kaiser Electroprecision cap/flange P/Ns 2651-194C, 2651-197C, 2651-216, 2651-219, 2651-235, 2651-256, 2651-258, 2651-259, 2651-260, 2651-275, 2651-282, 2651-286; Shaw Aero Devices assembly P/N 0008-100; or other FAA-approved equivalent parts; accomplish the requirements of paragraphs (a)(6)(i), (a)(6)(ii), and (a)(6)(iii) of this AD at the times specified in those paragraphs. For the purposes of this paragraph ((a)(6)), "FAA-approved equivalent part" means either a "donut" plug which mates with the cap/flange P/Ns listed above, or a cap/flange which mates with the "donut" plug P/Ns listed above, such that the cap/flange and "donut" plug are used together as an assembled valve.

(i) Within 200 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 200 flight hours, conduct leak tests of the toilet tank dump valve and the service panel drain valve. The leak test of the toilet tank dump valve must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5

minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The service panel drain valve leak test must be performed with a minimum 3 PSID applied across the valve.

(ii) Perform a visual inspection of the outer door/cap and seal mating surface for wear or damage that may cause leakage. This inspection shall be accomplished in conjunction with the leak tests of paragraph (a)(6)(i) of this AD.

(iii) Within 5,000 flight hours after the effective date of this AD, replace all the "donut" valves identified in paragraph (a)(6) of this AD with another type of FAA-approved valve. Following installation of the replacement valve, perform the appropriate leak tests and seal replacements at the intervals specified for that replacement valve, as applicable.

(7) For each lavatory drain system not addressed in paragraphs (a)(2), (a)(3), (a)(4), (a)(5), and (a)(6) of this AD: Within 200 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 200 flight hours, accomplish the procedures specified in paragraphs (a)(7)(i) and (a)(7)(ii) of this AD.

(i) Conduct a leak test of the toilet tank dump valve and the service panel drain valve. The toilet tank dump valve leak test must be performed by filling the toilet tank with a minimum of 10 gallons of water/rinsing fluid and testing for leakage after a period of 5 minutes. Take precautions to avoid overfilling the tank and spilling fluid into the airplane. The leak test of the service panel drain valve must be performed with a minimum of 3 PSID applied across the valve inner door/closure device.

(ii) Perform a visual inspection of the outer cap/door and seal mating surface for wear or damage that may cause leakage.

(8) For flush/fill lines: Within 5,000 flight hours after the effective date of this AD, perform the requirements of paragraph (a)(8)(i) or (a)(8)(ii) of this AD, as applicable; and paragraph (a)(8)(iii) of this AD. Thereafter, repeat these requirements at intervals not to exceed 5,000 flight hours, or 48 months after the last documented seal change, whichever occurs later.

(i) If a lever lock cap is installed on the flush/fill line of the subject lavatory, replace the seals on the toilet tank anti-siphon (check) valve and the flush/fill line cap. Perform a leak test of the toilet tank anti-siphon (check) valve with a minimum of 3 PSID across the valve, in accordance with the applicable portions of paragraph (a)(8)(ii)(A) of this AD.

(ii) If a vacuum breaker check valve, Monogram P/N series 3765-190, or Shaw Aero Devices P/N series 301-0009-01 is installed on the subject lavatory, replace the seals/O-rings in the valve. Perform a leak test of the vacuum breaker check valve and verify proper operation of the vent line vacuum breaker, in accordance with paragraphs (a)(8)(ii)(A) and (a)(8)(ii)(B) of this AD.

(A) Leak test the toilet tank anti-siphon (check) valve or the vacuum breaker check valve by filling the toilet tank with water/rinsing fluid to a level such that the bowl is approximately half full (at least 2 inches above the flapper in the bowl). Apply 3 PSID across the valve in the same direction as occurs in flight. The vent line vacuum breaker on vacuum breaker check valves must be pinched closed or plugged for this leak test. If there is a cap/valve at the flush/fill line port, the cap/valve must be removed/open during the test. Check for leakage at the flush/fill line port for a period of 5 minutes.

(B) Verify proper operation of the vent line vacuum breaker by filling the tank and checking at the fill line port for back drainage after disconnecting the fluid source from the flush/fill line port. If back drainage does not occur, replace the vent line vacuum breaker or repair the vacuum breaker check valve, in accordance with the component maintenance manual, to obtain proper back drainage. As an alternative to the test technique specified above, verify proper operation of the vent line vacuum breaker in accordance with the procedures of the applicable component maintenance manual.

(iii) If a flush/fill ball valve, Kaiser Electroprecision P/N series 0062-0009, is installed on the flush/fill line of the subject lavatory, replace the seals in the flush/fill ball valve and the toilet tank anti-siphon valve. Perform a leak test of the toilet tank anti-siphon valve with a minimum of 3 PSID across the valve, in accordance with paragraph (a)(8)(ii)(A) of this AD.

(9) If leakage is discovered during any leak test or inspection required by paragraph (a) of this AD, or if evidence of leakage is found at any other time, accomplish the requirements of paragraph (a)(9)(i), (a)(9)(ii), or (a)(9)(iii) of this AD, as applicable.

(i) If a leak is discovered, prior to further flight, repair the leak. Prior to further flight after repair, perform the appropriate leak test as specified in paragraph (a) of this AD, as applicable. Additionally, prior to returning the airplane to service, clean the surfaces adjacent to where the leakage occurred to clear them of any horizontal fluid residue streaks; such cleaning must be to the extent that any future appearance of a horizontal fluid residue streak will be taken to mean that the system is leaking again.

**Note 4:** For purposes of this AD, "leakage" is defined as any visible leakage, if observed during a leak test. At any other time (than during a leak test), "leakage" is defined as the presence of ice in the service panel, or horizontal fluid residue streaks/ice trails originating at the service panel. The fluid residue is usually, but not necessarily, blue in color.

(ii) If any worn or damaged seal is found, or if any damaged seal mating surface is found, prior to further flight, repair or replace it in accordance with the valve manufacturer's maintenance manual.

(iii) In lieu of performing the requirements of paragraph (a)(9)(i) or (a)(9)(ii) of this AD: Prior to further flight, drain the affected lavatory system and placard the lavatory inoperative until repairs can be accomplished.

(b) For all airplanes: Unless accomplished previously, within 5,000 flight hours after the effective date of this AD, perform the actions specified in either paragraph (b)(1), (b)(2), or (b)(3) of this AD:

(1) Install an FAA-approved lever lock cap on the flush/fill lines for all lavatories. Or

(2) Install a vacuum break, Monogram P/N series 3765-190, or Shaw Aero Devices P/N series 301-0009-01, in the flush/fill lines for all lavatories. Or

(3) Install a flush/fill ball valve, Kaiser Electroprecision P/N series 0062-0009, on the flush/fill lines for all lavatories.

(c) For any affected airplane acquired after the effective date of this AD: Before any operator places into service any airplane subject to the requirements of this AD, a schedule for the accomplishment of the leak tests required by this AD shall be established in accordance with either paragraph (c)(1) or (c)(2) of this AD, as applicable. After each leak test has been performed once, each subsequent leak test must be performed in accordance with the new operator's schedule, in accordance with paragraph (a) of this AD.

(1) For airplanes that have been maintained previously in accordance with this AD, the first leak test to be performed by the new operator must be accomplished in accordance with the previous operator's schedule or with the new operator's schedule, whichever results in the earlier accomplishment date for that leak test.

(2) For airplanes that have not been previously maintained in accordance with this AD, the first leak test to be performed by the new operator must be accomplished prior to further flight, or in accordance with a schedule approved by the FAA Principal Maintenance Inspector (PMI), but within a period not to exceed 200 flight hours.

## **Alternative Methods of Compliance**

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles ACO. Operators shall submit their requests through an appropriate FAA PMI, who may add comments and then send it to the Manager, Los Angeles ACO.

**Note 5:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

## **Special Flight Permits**

(e) Special flight permits may be issued in accordance with Secs. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

## **Effective Date**

(f) This amendment becomes effective on March 19, 2002.

Issued in Renton, Washington, on February 5, 2002.

**Ali Bahrami,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 02-3311 Filed 2-11-02; 8:45 am]

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