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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [59 FR 33644 NO. 125 06/30/94]

Docket No. 94-NM-01-AD; Amendment 39-8955; AD 94-14-03

Airworthiness Directives; Nordskog Water Heaters and Coffee Makers as Installed in Various Airplanes

AGENCY: Federal Aviation Administration, DOT

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Nordskog water heaters and coffee makers. This amendment requires an inspection to determine whether certain discrepant pressure relief valves have been installed in certain galley water heaters and coffee makers; and either replacement of the discrepant valves, or discontinued use of the water heaters or coffee makers and installation of placards indicating that these units are not to be used. This amendment is prompted by reports of injuries to cabin crew members that resulted from explosions of galley water heaters. The actions specified by this AD are intended to prevent explosions of galley water heaters and coffee makers, and subsequent injuries to passengers or cabin crew members.

DATES: Effective August 1, 1994.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 1, 1994.

ADDRESSES: The service information referenced in this AD may be obtained from Aircraft Products Company, 12807 Lake Drive, P.O. Box 130, Delray Beach, Florida 33447-0130. 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 (ACO), 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Walter Eierman, Systems and Equipment Branch, ANM-131L, FAA, Transport Airplane Directorate, Los Angeles ACO, 3229 East Spring Street, Long Beach, California 90806-2425; telephone (310) 988-5336; fax (310) 988-5210.

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 Nordskog water heaters and coffee makers was published in the Federal Register on March 16, 1994 (59 FR 12203). That action proposed to require an inspection to determine whether certain discrepant pressure relief valves have been installed in certain galley water

heaters and coffee makers; and either replacement of the discrepant valves, or discontinued use of the water heaters or coffee makers and installation of placards indicating that these units are not to be used.

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

Several commenters support the proposal.

Another commenter supports the proposed AD action, but requests that it be issued as an immediately adopted rule, in light of the potential for serious injury to passengers and cabin crew members that is associated with exploding water heaters and coffee makers. This commenter points out that AD 93-23-01, amendment 39-8735 (58 FR 61618, November 22, 1993), addressed this same problem in other water heaters and coffee makers using the same pressure relief valves, and it was made effective immediately, without prior opportunity for notice and public comment. This commenter questions whether the unsafe condition is any "less" for the units addressed by the proposal than for those addressed by AD 93-23-01. The FAA responds by noting that the incident reports that prompted the issuance of AD 93-23-01 involved units equipped with an integral check valve; AD 93-23-01 applies only to units with the integral check valve installation. At the time that AD 93-23-01 was issued, the FAA was in the process of evaluating the need for additional AD action to address other installations that incorporate the same pressure relief valve design. The FAA found that Nordskog water heaters and coffee makers without the integral check valve could use the same pressure relief valve in other applications and, therefore, could also be subject to the same unsafe condition. However, because there had been no service history of incidents involving units without the integral check valve, the FAA could not demonstrate that the safety concern was so critical that it should preclude the opportunity for prior notice and public comment on this rule.

Two commenters do not consider that AD action is appropriate to address a "non-critical" application of the subject valve. These commenters point out that AD 93-23-01 implemented the recommendations of Nordskog Service Bulletin 93-34, which targeted the "critical" valve installations. However, the proposed AD would implement the recommendations of Nordskog Service Bulletin 93-35, which addresses "non-critical" installations of the valve. In light of this, the commenters contend that the AD is unnecessary. The FAA does not concur. The FAA acknowledges that AD 93-23-01 addresses units that incorporate the subject valve as an integral check valve, which may be viewed as a "critical" application of the valve; it was a unit equipped with this integral check valve that exploded during the incident that prompted issuance of that AD. However, as discussed in the previous comment, the FAA has determined that water heaters and coffee makers that are not equipped with the integral check valve but use the same pressure relief valve addressed by AD 93-23-01, may also be subject to the same unsafe condition addressed by that AD. Although the commenters may view the component design of the units addressed by this AD action as "less critical" than those addressed by AD 93-23-01, the FAA has received no data to demonstrate that the subject relief valve is not necessary to assure system safety. Therefore, the FAA considers this AD action to be both appropriate and warranted.

One commenter requests that the proposed rule be revised to permit the installation of the discrepant NUPRO pressure relief valve after the effective date of the AD and until the compliance time for inspection. This commenter points out that proposed paragraph (b) would require that, as of the effective date of the rule, no operator would be allowed to install a discrepant valve on any airplane; however, operators would have up to 12 months to remove

any discrepant valve that is currently installed on the airplane. The FAA does not concur in this case. Removing an unsafe condition that already exists on an airplane necessarily involves performing maintenance on the airplane, and the FAA always provides some kind of "grace period" in order to minimize disruption of operations. On the other hand, prohibiting installation of spares that have been determined to create an unsafe condition does not require any additional maintenance activity; it simply requires use of one part rather than another. In general, once an unsafe condition has been determined to exist, it is the FAA's normal policy not to allow that condition to be introduced into the fleet. In developing the technical information on which every AD is based, one of the important considerations is the availability of parts that the AD will require to be installed. When it is determined that those (safe) parts are immediately available to operators, it is the FAA's policy to prohibit installation of the unsafe parts after the effective date of the AD.

Further, the FAA considers that the period of time between publication of the final rule AD in the Federal Register and the effective date of the final rule (usually 30 days) is sufficient to provide operators with an opportunity to determine their immediate need for modified spares and to obtain them. Of course, in individual cases where this is not possible, every AD contains a provision that allows an operator to obtain an extension of compliance time based upon a specific showing of need. The FAA considers that this policy does increase safety and does not impose undue burdens on operators.

One commenter is concerned about the thermostat installed on the water heaters and coffee makers equipped with the subject NUPRO pressure relief valves, and its involvement in the incident of explosion of the water heater. This commenter assumes that the incident was the result of one of two possible failure paths: either the thermostat failed closed and the pressure relief valve failed closed; or the power relay failed closed and the pressure relief valve failed closed. This commenter indicates that the proposed rule does not address these possible failure paths or the fact that failures of the thermostat or relay are non-indicating by themselves. The FAA acknowledges that this commenter's assumptions about the failure paths is reasonable. Although a failure other than that of the relief valve could not be identified, some failure apparently occurred in the temperature control system to cause the pressure to build up beyond its normal level. Generally, it is expected that the temperature control system will fail sometime during its service life; the relief valve is in the system to address that failure. Although increased redundancy and failure monitoring in the temperature control system would be two ways of improving system safety, those methods are not considered necessary in this case. Replacement of the discrepant valve with the improved valve will address the failure scenario that actually occurred.

This commenter also is concerned about part identification of inserts in the affected water heaters and coffee makers, and the need for a possible design change of NUPRO relief valves that have a common design type. Since these issues do not directly concern this rulemaking action, the FAA has passed the commenter's suggestions on to the appropriate manufacturer.

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 as proposed.

The FAA is aware that the subject water heaters and coffee makers are installed in various airplanes. There are approximately 300 of these airplanes in the worldwide fleet, the FAA estimates that 200 airplanes are of U.S. registry. It will take approximately 2 work hours per airplane to accomplish the proposed actions, and the average labor rate is \$55 per work hour. (There are approximately 4 water heaters and/or coffee makers installed on each airplane.) The

cost of required parts is expected to be negligible. Based on these figures, the total cost impact of this AD on U.S. operators is estimated to be \$22,000, or \$110 per airplane.

The total cost impact figure discussed above is 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 regulations adopted herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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, Incorporation by reference, 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. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§ 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**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, 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).

94-14-13 NORDSKOG INDUSTRIES, INC.: Amendment 39-8955. Docket 94-NM-01-AD.

Applicability: Nordskog water heaters and coffee makers, as listed in Nordskog Industries, Inc., Service Bulletin SB-93-35, dated October 21, 1993; as installed in, but not limited to, Boeing Model 727, 737, 747, 757, and 767 series airplanes; McDonnell Douglas Model DC-9, DC-9-80, and DC-10 series airplanes, and MD-11 airplanes; Lockheed Model L-1011 series airplanes; Airbus Industrie Model A300, A310, and A320 series airplanes; Gulfstream Model G-1159 series airplanes and Model G-IV airplanes; de Havilland, Inc., Model DHC-8 series airplanes; Dassault-Aviation Model Mystere-Falcon 50, 200, and 900 series airplanes; Canadair Model CL-600-1A11 (CL-600), CL-600-2A12 (CL-601), and CL-600-2B16 (CL-601-3A and -3R) and CL-600-2B19 series airplanes; and Fokker Model F27 and F28 series airplanes; certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent explosions of galley water heaters and coffee makers, and subsequent injuries to passengers or cabin crew members, accomplish the following:

(a) Within 12 months after the effective date of this AD, perform a one-time inspection to determine whether a NUPRO pressure relief valve having part number (P/N) SS-2C4-65 has been installed, in accordance with Nordskog Industries, Inc., Service Bulletin SB-93-35, dated October 21, 1993. If any NUPRO pressure relief valve having P/N SS-2C4-65 has been installed, prior to further flight, accomplish either paragraph (a)(1) or (a)(2) of this AD.

(1) Remove the NUPRO pressure relief valve having P/N SS-2C4-65 and install a new, improved NUPRO pressure relief valve having P/N SS-CHF2-65, in accordance with the service bulletin. Or

(2) Deactivate any Nordskog water heater or coffee maker listed in the service bulletin on which a NUPRO pressure relief valve having P/N SS-2C4-65 has been installed, and install a placard stating, "Not to be used."

(b) As of the effective date of this AD, no person shall install a NUPRO pressure relief valve having P/N SS-2C4-65 on any airplane.

(c) 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 Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

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

(d) Special flight permits may be issued in accordance with sections 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.

(e) The inspection and installation shall be done in accordance with Nordskog Industries, Inc., Service Bulletin SB-93-35, dated October 21, 1993. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Aircraft Products Company, 12807 Lake Drive, P.O. Box 130, Delray Beach, Florida 33447-0130. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office (ACO), 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(f) This amendment becomes effective on August 1, 1994.