

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2000-NM-360-AD." The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2000-NM-360-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

Discussion

The FAA has received reports of sagging cell stack membranes of the flight deck humidifiers on certain Boeing Model 747-400, 777-200, and 777-300 series airplanes. The sagging has been attributed to difficulties encountered during the membrane welding process. The result of the sagging membranes is an increased pressure drop across the humidifier (if it is activated), and consequent reduced airflow to the flight deck. These conditions, if not corrected, could result in the inability to clear any smoke that might appear in the flight deck.

Explanation of Relevant Service Information

We have reviewed and approved Boeing Alert Service Bulletin 747-21A2414, Revision 1, dated October 26, 2000 (for Model 747-400 series airplanes), and Boeing Service Bulletin 777-21A0048, Revision 1, dated September 7, 2000 (for Model 777-200 and 777-300 series airplanes). Service Bulletin 747-21A2414 describes procedures for replacement of the cell

stack of the flight deck humidifier with a new or reworked cell stack, or replacement with an end plate and subsequent deactivation of the flight deck humidifier. Service Bulletin 777-21A0048 describes procedures for replacement of the cell stack with a blanking plate or a supplier-tested cell stack, or replacement of the blanking plate with a supplier-tested cell stack. Accomplishment of the actions specified in the service bulletins is intended to adequately address the identified unsafe condition.

Boeing Service Bulletins 747-21A2414 and 777-21A0048 refer to Hamilton Sundstrand Service Bulletins 821486-21-01 and 816086-21-01, respectively (both dated March 15, 2000), as additional sources of service information for replacement of the cell stack.

Boeing Service Bulletin 747-21A2414 also refers to Boeing Service Bulletin 747-21-2405, which provides information for activation and deactivation of the flight deck humidifier. Boeing Service Bulletin 777-21A0048 refers to Boeing Service Bulletin 777-21-0035, which provides information for activation of the flightdeck humidifier.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require accomplishment of the actions specified in Boeing Service Bulletins 747-21A2414 and 777-21A0048, described previously, except as discussed below.

Differences Between Proposed AD and Service Bulletins

Boeing Service Bulletins 747-21A2414 and 777-21A0048 recommend replacing the cell stack within 60 days; the proposed AD would allow up to 90 days. In developing an appropriate compliance time, we considered the safety implications and operators' normal maintenance schedules for the timely replacement of the cell stack. Therefore, with manufacturer concurrence, we have determined that the proposed 90-day compliance time represents an appropriate interval to replace the cell stack and still maintain an adequate level of safety within the fleet.

Explanation of Certain Alternative Method of Compliance

Paragraph (c)(1) of this proposed AD would allow replacement of the cell stack with a blanking plate provided the humidifier system is deactivated. The service bulletin provides no procedures for deactivating the humidifier system. Therefore, this option must be done in accordance with a method approved by the FAA, or per data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the FAA to make such findings.

Cost Impact

There are approximately 35 airplanes of the affected design in the worldwide fleet. The FAA estimates that 12 airplanes of U.S. registry would be affected by this proposed AD. The FAA provides the following cost estimates, which would vary depending on the actions chosen by the operator, to comply with this proposed AD.

Model/series	Action	Work hours	Hourly rate	Parts cost	Cost per airplane
747-400	Replace cell stack with supplier-tested cell stack	5	\$65	\$5,100	\$5,425
747-400	Replace cell stack with end plate and deactivate humidifier	6	65	0	390
777-200	Replace cell stack with blanking plate	5	65	0	325
777-300	Replace cell stack with supplier-tested cell stack	5	65	6,053	6,378
777-200	Replace blanking plate with supplier-tested cell stack	3	65	6,053	6,248

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

rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein would 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,