

Return to Service Requirements

(i) Engines removed from service in accordance with paragraph (c), (d), (e), or (g) of this AD may be returned to service under the following conditions:

(1) After passing a cool-engine fuel spike stability test (Testing-21) that has been done in accordance with PW4000 Engine Manual (EM) 50A605, 71-00-00, Testing-21, dated June 15, 2003; or PW4000 EM 50A443, 71-00-00, Testing-21, dated March 15, 2002; or PW4000 EM 50A822, 71-00-00, Testing-21, dated March 15, 2002; except for engines configured with Configuration E; or engines that have experienced a Group 3 takeoff surge; or

(2) Engines tested before the effective date of this AD, in accordance with PW4000 EM 50A605, 71-00-00, Testing-21, dated March 15, 2002; or PW4000 EM 50A443, 71-00-00, Testing-21, dated November 14, 2001; or PW4000 EM 50A443, Temporary Revision No. 71-0026, dated November 14, 2001; or PW4000 EM 50A605, Temporary Revision No. 71-0035, dated November 14, 2001; or PW4000 EM 50A822, 71-00-00, Testing-21, dated November 14, 2001; or PW4000 EM 50A822, Temporary Revision No. 71-0018, dated November 14, 2001; or PW Internal Engineering Notice (IEN) 96KC973D, dated October 12, 2001, meet the requirements of Testing-21; or

(3) For PW4056 engines installed on Boeing 747 airplanes, after successfully completing on-wing Testing-21 in accordance with Major IEN 02KCW13E, dated November 21, 2002; or if done prior to the approval of Major IEN 02KCW13E, dated November 21, 2002; in accordance with Minor IENs 02KCW13, dated October 14, 2002; 02KCW13A, dated October 14, 2002; 02KCW13C, dated July 25, 2002; or 02KCW13D, July 29, 2002; except for engines configured with Configuration E, or engines that have experienced a Group 3 takeoff surge; or

(4) For PW4460 and PW4462 engines installed on McDonnell Douglas MD-11 airplanes, after successfully completing on-wing Testing-21, in accordance with Major IEN 02KCW13H, dated December 9, 2002; or if done prior to the approval of Major IEN 02KCW13H, dated December 9, 2002, in accordance with Minor IEN 02KCW13F, dated October 14, 2002; except for engines configured with Configuration E, or engines that have experienced a Group 3 takeoff surge; or

(5) An engine that is either below or exceeds the limits of Table 3 or Table 4 of this AD may be removed and installed on another airplane without Testing-21, as long as the requirements of paragraph (c), (d), (e), or (g) of this AD are met at the time of engine installation.

(6) An engine that has incorporated the RCC rear HPC in accordance with:

(i) PW SB PW4ENG 72-755, Revision 3, dated September 16, 2003, for engines installed in Boeing airplanes, or

(ii) PW SB PW4ENG 72-756, Revision 1, dated September 15, 2003, or PW SB PW4ENG 72-759, Revision 1, dated September 16, 2003, for engines installed in Airbus airplanes, or

(iii) PW SB PW4ENG 72-757, Revision 1, dated September 15, 2003, for engines

installed in McDonnell Douglas MD-11 airplanes; or

(iv) RCC rear HPCs that were incorporated before the effective date this AD are allowed credit, in accordance with paragraph (t) of this AD.

(v) Completing the SBs referenced in paragraphs (i)(6)(i) through (i)(6)(iii) of this AD changes the engine configuration to Configuration I.

Phase 0 or Phase 1, FB2T or FB2B Fan Blade Configurations

(j) For Configuration A, B, C, D, E, F, G, and H engines with Phase 0 or Phase 1, FB2T or FB2B fan blade configurations complying with the requirements of AD 2001-09-05, (66 FR 22908, May 5, 2001); AD 2001-09-10, (66 FR 21853, May 2, 2001); or AD 2001-01-10, (66 FR 6449, January 22, 2001); do the following:

(1) Operators complying with the ADs listed in paragraph (j) of this AD using the weight restriction compliance method, must perform Testing-21 in accordance with paragraph (i) of this AD whenever any quantity of fan blades are replaced with new fan blades, overhauled fan blades, or with fan blades having the leading edges recontoured after the effective date of this AD, if during the shop visit the HPC is not overhauled and separation of a major engine flange, located between "A" flange and "T" flange, does not occur.

(2) If an operator changes from the weight restriction compliance method to the fan blade leading edge recontouring method after the effective date of this AD, Testing-21 in accordance with paragraph (i) of this AD is required each time fan blade leading edge recontouring is done, if the fan blades accumulate more than 450 cycles since new or since fan blade overhaul, or since the last time the fan blade leading edges were recontoured.

Minimum Build Standard

(k) For engines to be installed on Boeing airplanes that are inducted into the shop after July 7, 2003; for engines to be installed on Airbus airplanes that are inducted into the shop after the effective date of this AD; and for engines to be installed on McDonnell Douglas MD-11 airplanes that are inducted into the shop 30 days after the effective date of this AD:

(1) Any Segmented Case Configuration (SCC) HPC module that is disassembled to a level that fully separates the HPC rear case assembly at H flange from the HPC module may not be returned to service unless the RCC rear HPC is incorporated in accordance with paragraphs (i)(6)(i) through (i)(6)(iii) of this AD.

(2) Any engine with a SCC HPC module that is not disassembled in accordance with paragraph (k)(1) of this AD, must meet the following minimum build standard:

(i) Do not install an engine with SCC HPC and HPT modules where the CSO of the HPC is 1,500 cycles or more than the CSN or CSO of the HPT.

(ii) Any engine that undergoes separation of the SCC HPC and HPT modules must not be installed on an airplane unless it meets the build standard defined by PW SB

PW4ENG 72-514. Engines that incorporate the Phase 3 configuration meet the build standard defined by PW SB PW4ENG 72-514.

Stability Testing Requirements

(l) For engines to be installed on Boeing, Airbus, or McDonnell Douglas airplanes, after the effective date of this AD, Testing-21 must be performed in accordance with paragraph (i) of this AD, before an engine can be returned to service after having undergone maintenance in the shop, except under any of the following conditions:

(1) Engine HPC has incorporated the RCC rear HPC in accordance with paragraphs (i)(6)(i) through (i)(6)(iii) of this AD.

(2) Engine maintenance intended to maintain the airworthiness of the engine between planned shop visits, that requires separation of a major engine flange located between "A" flange and "T" flange, that results in the engine being reassembled with all gas path-related components remaining in the as-removed condition; or

(3) Engines that successfully passed Testing-21 with zero CST, and are split at Flange E for transportation reasons as specified in the applicable Storage/Transport section of the applicable EM.

Thrust Rating Changes, Installation Changes, and Engine Transfers for Non-Configuration I Engines

(m) When a thrust rating change has been made by using the Electronic Engine Control (EEC) programming plug, or an installation change has been made during an HPC overhaul period, use the lowest cyclic limit of Table 3 or Table 4 of this AD, associated with any engine thrust rating change or with any installation change made during this period. See paragraph (s)(2) for definition of HPC overhaul period.

(n) When a PW4158 engine is transferred to another PW4158 engine operator whose engine fleet has a different category, use the lowest cyclic limit in Table 4 of this AD that was used or will be used during the affected HPC overhaul period.

(o) When a PW4158 engine operator whose engine fleet changes category in accordance with paragraph (h) of this AD, use the lowest cyclic limits in Table 4 of this AD that were used or will be used during the affected HPC overhaul period.

(p) Engines with an HPC having zero CSN or CSO at the time of thrust rating change, or installation change, or engine transfer between PW4158 engine operators, or subsequent change in operator engine fleet category in accordance with paragraph (h) of this AD in the direction of lower to higher Table 4 limits of this AD, are exempt from the lowest cyclic limit requirement in paragraphs (m), (n), and (o) of this AD.

Engines That Surge

(q) For engines that experience a surge, and after troubleshooting procedures are completed for airplane-level surge during forward or reverse thrust, do the following:

(1) For engines that experience a Group 3 takeoff surge, do the following:

(i) Remove the engine from service before further flight and