

accordance with paragraph (i) or (j) 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 for Engines Installed on McDonnell Douglas MD-11 Airplanes**

(l) Use the following minimum build standards for engines to be returned to service and installed on McDonnell Douglas MD-11 airplanes:

(1) After the effective date of this AD, do not install an engine with HPC and HPT modules where the CSO of the HPC is 1,500 cycles or greater than the CSN or CSO of the HPT.

(2) For any engine that undergoes an HPC overhaul after the effective date of this AD:

(i) Inspect the HPC mid hook and rear hook of the HPC inner case for wear in accordance with PW Clean, Inspect and Repair (CIR) Manual PN 51A357, Section 72-35-68 Inspection/Check-04, Indexes 8-11, dated December 15, 2002; or March 15, 2002; or September 15, 2001. If the HPC rear hook is worn beyond serviceable limits, replace the HPC inner case rear hook with an improved durability hook in accordance with PW SB PW4ENG 72-714, Revision 1, dated November 8, 2001; or Revision 2, dated February 28, 2003; or Chromalloy Florida Repair Procedure 00 CFL-039-0, dated December 27, 2000. If the HPC inner case mid hook is worn beyond serviceable limits, repair the HPC inner case mid hook in accordance with PW SB PW4ENG 72-749, dated June 17, 2002; or Revision 1, dated January 8, 2003; or Chromalloy Florida Repair Procedure 02 CFL-024-0, dated September 15, 2002.

(ii) After the effective date of this AD, any engine that undergoes an HPC overhaul may not be returned to service unless it meets the build standard of PW SB PW4ENG 72-484, PW4ENG 72-486, PW4ENG 72-514, and PW4ENG 72-575. Engines that incorporate the Phase 3 configuration already meet the build standard defined by PW SB PW4ENG 72-514.

(3) After the effective date of this AD, any engine that undergoes separation of the HPC and HPT modules must not be installed on an airplane unless it meets the build standard of PW SB PW4ENG 72-514. Engines that incorporate the Phase 3 configuration already meet the build standard defined by PW SB PW4ENG 72-514.

#### **Minimum Build Standard for Engines Installed on Boeing and Airbus Airplanes**

(m) For engines inducted into the shop after July 7, 2003 for Boeing 747 and 767 airplanes; and after the effective date of this AD for Airbus airplanes:

(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 PW SB PW4ENG 72-755, Revision 2, dated May 23, 2003, for engines installed on

Boeing airplanes; or PW SB PW4ENG72-756, dated July 7, 2003, or PW SB PW4ENG72-759, dated July 7, 2003, for engines installed on Airbus airplanes.

(2) Any engine with a SCC HPC module that is not disassembled in accordance with paragraph (m)(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 for Engines To Be Installed on McDonnell Douglas MD-11 Airplanes**

(n) For engines to be installed on McDonnell Douglas MD-11 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) The engine HPC was overhauled, or replaced with an overhauled HPC with zero cycles since overhaul; or the engine HPC was replaced with an HPC that is new from production with no time in service; or

(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 with an HPC having zero CSN or CSO, or 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 Engine Manual.

#### **Stability Testing Requirements for Engines To Be Installed on Boeing or Airbus Airplanes**

(o) For engines to be installed on Boeing 767, 747, or Airbus A300, or A310 airplanes, after the effective date of this AD, Testing-21 must be performed in accordance with paragraph (j) 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 PW SB PW4ENG 72-755, Revision 2, dated May 23, 2003, for engines installed on Boeing airplanes; or PW SB PW4ENG72-756, dated July 7, 2003; or PW SB PW4ENG72-759, dated July 7, 2003; for engines installed on Airbus airplanes. Incorporation of any of these SBs changes the engine configuration to Configuration I; or

(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**

(p) 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, 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 (v)(2) for definition of HPC overhaul period.

(q) 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.

(r) 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.

(s) 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 (p), (q), and (r) of this AD.

#### **Engines That Surge**

(t) 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, remove the engine from service before further flight and

(i) For engines that will be installed on McDonnell Douglas MD-11 airplanes, perform an HPC overhaul; or

(ii) For engines that will be installed on Boeing 747 or 767 airplanes, incorporate the RRC rear HPC in accordance with PW SB PW4ENG 72-755, Revision 2, dated May 23, 2003; or

(iii) For engines that will be installed on Airbus A300 or A310 airplanes, incorporate the RRC rear HPC in accordance with PW SB PW4ENG72-756, dated July 7, 2003, or PW SB PW4ENG72-759, dated July 7, 2003.

(2) For any engine that experiences a forward or reverse thrust surge at EPR's greater than 1.25 that is not a Group 3 takeoff surge, do the following:

(i) For Configuration A, B, C, D, F, G, and H engines, remove engine from service within 25 CIS or before further flight if airplane-level troubleshooting procedures