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TASK 05-00-00-912-004

1. Airworthiness Limitation Precautions

A. General

(1) Critical Design Configuration Control Limitations (CDCCLs)

(a) All occurrences of CDCCLs found in this chapter of the AMM are identified by this note after each applicable CDCCL design feature:

1) NOTE: CDCCL - Refer to the task: Airworthiness Limitation Precautions (AMM 05-00-00/201), for important information on Critical Design Configuration Control Limitations (CDCCLs).

(b) Design features that are CDCCLs are defined and controlled by Special Federal Aviation Regulation (SFAR) 88, and can be found in Section 9 of the Maintenance Planning Data (MPD) document. CDCCLs are a means of identifying certain design configuration features intended to preclude a fuel tank ignition source for the operational life of the airplane. CDCCLs are mandatory and cannot be changed or deleted without the approval of the FAA office that is responsible for the airplane model Type Certificate, or applicable regulatory agency. A critical fuel tank ignition source prevention feature may exist in the fuel system and its related installation or in systems that, if a failure condition were to develop, could interact with the fuel system in such a way that an unsafe condition would develop without this limitation. Strict adherence to configuration, methods, techniques, and practices as prescribed is required to ensure the CDCCL is complied with. Any use of parts, methods, techniques or practices not contained in the applicable CDCCL must be approved by the FAA office that is responsible for the airplane model Type Certificate, or applicable regulatory agency.

(2) Airworthiness Limitation Instructions (ALIs)

(a) All occurrences of fuel tank system ALIs found in this chapter of the AMM are identified by this step after the General section in the applicable ALI inspection task:

1) ALI - Refer to the task: Airworthiness Limitation Precautions (AMM 05-00-00/201), for important information on airworthiness limitation instructions (ALIs).

(b) Inspection tasks that are ALIs are defined and controlled by Special Federal Aviation Regulation (SFAR) 88, and can be found in Section 9 of the Maintenance Planning Data (MPD) document. These ALIs identify inspection tasks related to fuel tank ignition source prevention which must be done to maintain the design level of safety for the operational life of the airplane. These ALIs are mandatory and cannot be changed or deleted without the approval of the FAA office that is responsible for the airplane model Type Certificate, or applicable regulatory agency. Strict adherence to methods, techniques and practices as prescribed is required to ensure the ALI is complied with. Any use of methods, techniques or practices not contained in these ALIs must be approved by the FAA office that is responsible for the airplane model Type Certificate, or applicable regulatory agency.

B. Access

(1) Location Zones

100 Lower Half of Fuselage
200 Upper Half of Fuselage
500 Left Wing
600 Right Wing

C. Critical Design Configuration Control Limitations (CDCCLs)

S 912-002

WARNING: OBEY THE MANUFACTURER'S PROCEDURES WHEN YOU DO ANY MAINTENANCE THAT MAY AFFECT A CDCCL. IF YOU DO NOT FOLLOW THE PROCEDURES, IT CAN INCREASE THE THE RISK OF A FUEL TANK IGNITION SOURCE.

(1) Make sure you follow the procedures for items identified as CDCCLs.

D. Airworthiness Limitation Instructions (ALIs)

S 912-003

WARNING: OBEY THE MANUFACTURER'S PROCEDURES WHEN YOU DO ANY MAINTENANCE THAT MAY AFFECT AN ALI. IF YOU DO NOT FOLLOW THE PROCEDURES, IT CAN INCREASE THE RISK OF A FUEL TANK IGNITION SOURCE.

(1) Make sure you follow the procedures for tasks identified as ALIs.

LOWER EXTERIOR ZONAL SCHEDULED MAINTENANCE - MAINTENANCE PRACTICES

TASK 05-41-01-212-801

1. Lower Half of Fuselage - Exterior
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-01-212-802

2. Radome
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-01-212-803

3. Areas Forward of NLG Wheel Well
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-01-212-804

4. Nose Landing Gear Wheel Well
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-004
      (1) Do the zonal inspection.

TASK 05-41-01-212-805

5. Areas Outboard and Above NLG Wheel Well
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-005
(1) Do the zonal inspection.

TASK 05-41-01-212-806

6. Main Equipment Center
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-01-212-807

7. Main Equipment Center
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-01-212-808

8. Forward Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-01-212-809

9. Forward Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-01-212-811

10. Areas Below Forward Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-011
(1) Do the zonal inspection.

TASK 05-41-01-212-812

11. Areas Aft of Forward Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-012
(1) Do the zonal inspection.

TASK 05-41-01-212-813

12. Areas Above Wing Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-013
(1) Do the zonal inspection.

TASK 05-41-01-212-816

13. Wing Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-016
(1) Do the zonal inspection.

TASK 05-41-01-212-817

14. Environmental Control System Bays
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-017
(1) Do the zonal inspection.

TASK 05-41-01-212-818

15. Areas Above MLG Wheel Well
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 05-41-01-212-820
16. Left Main Wheel Well
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-020
(1) Do the zonal inspection.

TASK 05-41-01-212-821
17. Right Main Wheel Well
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-021
(1) Do the zonal inspection.

TASK 05-41-01-212-822
18. Areas Forward of Aft Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-022
(1) Do the zonal inspection.

TASK 05-41-01-212-823
19. Areas Forward of Aft Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-023
(1) Do the zonal inspection.

TASK 05-41-01-212-825
20. Areas Forward of Aft Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-025
(1) Do the zonal inspection.

TASK 05-41-01-212-827

21. Aft Cargo Compartment - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-027
(1) Do the zonal inspection.

TASK 05-41-01-212-828

22. Aft Cargo Compartment - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-028
(1) Do the zonal inspection.

TASK 05-41-01-212-830

23. Aft Cargo Compartment - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-030
(1) Do the zonal inspection.

TASK 05-41-01-212-831

24. Aft Cargo Compartment - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-031
(1) Do the zonal inspection.

TASK 05-41-01-212-833

25. Areas Below Aft Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-033
(1) Do the zonal inspection.

TASK 05-41-01-212-834

26. Bulk Cargo Compartment - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-034
(1) Do the zonal inspection.

TASK 05-41-01-212-835

27. Bulk Cargo Compartment - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-035
(1) Do the zonal inspection.

TASK 05-41-01-212-837

28. Bulk Cargo Compartment - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-037
(1) Do the zonal inspection.

TASK 05-41-01-212-838

29. Bulk Cargo Compartment - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-038
(1) Do the zonal inspection.

TASK 05-41-01-212-840

30. Areas Below Bulk Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-040
(1) Do the zonal inspection.

TASK 05-41-01-212-841

31. Areas Aft of Bulk Cargo Compartment
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-041
(1) Do the zonal inspection.

TASK 05-41-01-212-842

32. Wing To Body Fairings - Forward Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-042
(1) Do the zonal inspection.

TASK 05-41-01-212-843

33. Wing To Body Fairings - Forward Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-043
(1) Do the zonal inspection.

TASK 05-41-01-212-844

34. Wing To Body Fairings - Aft Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-044
(1) Do the zonal inspection.

TASK 05-41-01-212-845

35. Wing To Body Fairings - Aft Right
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-045
(1) Do the zonal inspection.

UPPER EXTERIOR ZONAL SCHEDULED MAINTENANCE - MAINTENANCE PRACTICES

TASK 05-41-02-212-801

1. Upper Half of Fuselage - Exterior
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-02-212-802

2. Control Cabin
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-02-212-803

3. Passenger Cabin - Section 41
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-02-212-804

4. Area Above Ceiling Passenger Cabin - Section 41
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-004
      (1) Do the zonal inspection.

TASK 05-41-02-212-805

5. Passenger Cabin - Section 43
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-005
(1) Do the zonal inspection.

TASK 05-41-02-212-806

6. Area Above Passenger Cabin Ceiling - Section 43
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-02-212-807

7. Passenger Cabin - Section 45
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-02-212-808

8. Area Above Passenger Cabin Ceiling - Section 45
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-02-212-809

9. Passenger Cabin - Section 46
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-02-212-810

10. Area Above Passenger Cabin Ceiling - Section 46
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-010
(1) Do the zonal inspection.

AFT ZONAL SCHEDULED MAINTENANCE - MAINTENANCE PRACTICES

TASK 05-41-03-212-801

1. Areas Aft of Pressure B/H to BS 1725.5
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-03-212-802

2. Areas Aft of Pressure B/H to BS 1725.5
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-03-212-803

3. Stabilizer Torsion Box Compartment - Left
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-03-212-804

4. Stabilizer Torsion Box Compartment - Right
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-004
      (1) Do the zonal inspection.

TASK 05-41-03-212-805

5. APU Compartment
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-005
(1) Do the zonal inspection.

TASK 05-41-03-212-806

6. APU Compartment
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-03-212-807

7. Vertical Stabilizer - Removable Leading Edge
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-03-212-808

8. Vertical Stabilizer - Auxiliary Spar to Front Spar
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-03-212-809

9. Vertical Stabilizer - Auxiliary Spar to Front Spar
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-03-212-810

10. Vertical Stabilizer - Front Spar to Rear Spar
    A. General
       (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-010
(1) Do the zonal inspection.

TASK 05-41-03-212-811
11. Vertical Stabilizer - Front Spar to Rear Spar
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-011
(1) Do the zonal inspection.

TASK 05-41-03-212-812
12. Vertical Stabilizer - Rear Spar to Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-012
(1) Do the zonal inspection.

TASK 05-41-03-212-813
13. Vertical Stabilizer - Rear Spar to Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-013
(1) Do the zonal inspection.

TASK 05-41-03-212-814
14. Rudder
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-014
(1) Do the zonal inspection.

TASK 05-41-03-212-815
15. Vertical Stabilizer - Tip
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-015
(1) Do the zonal inspection.

TASK 05-41-03-212-816
16. Horizontal Stabilizer Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-016
(1) Do the zonal inspection.

TASK 05-41-03-212-817
17. Horizontal Stabilizer Center Section
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-017
(1) Do the zonal inspection.

TASK 05-41-03-212-818
18. Horizontal Stabilizer - Front to Rear Spar
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 05-41-03-212-819
19. Horizontal Stabilizer - Rear Spar to Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-019
(1) Do the zonal inspection.

TASK 05-41-03-212-820
20. Horizontal Stabilizer - Rear Spar to Stabilizer Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-020

(1) Do the zonal inspection.

TASK 05-41-03-212-821

21. Horizontal Stabilizer - Rear Spar to Stabilizer Trailing Edge

A. General

(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-021

(1) Do the zonal inspection.

TASK 05-41-03-212-822

22. Horizontal Stabilizer - Tip

A. General

(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-022

(1) Do the zonal inspection.

INNER WING ZONAL SCHEDULED MAINTENANCE - MAINTENANCE PRACTICES

TASK 05-41-04-212-861

1. Engine 1 Thrust Reversers
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-061
      (1) Do the zonal inspection.

TASK 05-41-04-212-862

2. Engine 2 Thrust Reversers
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-062
      (1) Do the zonal inspection.

TASK 05-41-04-212-863

3. Engine 1
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-063
      (1) Do the zonal inspection.

TASK 05-41-04-212-864

4. Engine 2
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-064
      (1) Do the zonal inspection.

TASK 05-41-04-212-865

5. Engine 1 Fan Cowl Panels
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-065
(1) Do the zonal inspection.

TASK 05-41-04-212-866

6. Engine 2 Fan Cowl Panels
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-066
(1) Do the zonal inspection.

TASK 05-41-04-212-867

7. Engine 1 Core Cowl Panels
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-067
(1) Do the zonal inspection.

TASK 05-41-04-212-868

8. Engine 2 Core Cowl Panels
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-068
(1) Do the zonal inspection.

TASK 05-41-04-212-869

9. Strut 1 Forward Nacelle Strut Fairing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-069
(1) Do the zonal inspection.

TASK 05-41-04-212-870

10. Strut 1 Forward Nacelle Strut Fairing
    A. General
       (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-070
(1) Do the zonal inspection.

TASK 05-41-04-212-871

11. Engine 1 Core Cowl Panels
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-071
(1) Do the zonal inspection.

TASK 05-41-04-212-872

12. Engine 1 Core Cowl Panels
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-072
(1) Do the zonal inspection.

TASK 05-41-04-212-873

13. Strut 1 Underwing Fairing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-073
(1) Do the zonal inspection.

TASK 05-41-04-212-874

14. Strut 2 Underwing Fairing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-074
(1) Do the zonal inspection.

TASK 05-41-04-212-875

15. Strut 1 Mid and Aft Torque Boxes
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-075
(1) Do the zonal inspection.

TASK 05-41-04-212-876

16. Strut 2 Mid and Aft Torque Boxes
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-076
(1) Do the zonal inspection.

TASK 05-41-04-212-877

17. Engine 1 Nose Cowl
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-077
(1) Do the zonal inspection.

TASK 05-41-04-212-878

18. Engine 2 Nose Cowl
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-078
(1) Do the zonal inspection.

TASK 05-41-04-212-879

19. Engine 1 Thrust Reversers
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-079
(1) Do the zonal inspection.

TASK 05-41-04-212-880

20. Engine 2 Thrust Reversers
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-080
(1) Do the zonal inspection.

TASK 05-41-04-212-881

21. Strut 1 Aft Nacelle Strut Fairings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-081
(1) Do the zonal inspection.

TASK 05-41-04-212-882

22. Strut 2 Aft Nacelle Strut Fairings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-082
(1) Do the zonal inspection.

TASK 05-41-04-212-883

23. Strut 1 Core Cowl Skirt Fairings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-083
(1) Do the zonal inspection.

TASK 05-41-04-212-884

24. Strut 2 Core Cowl Skirt Fairings
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-084
(1) Do the zonal inspection.

TASK 05-41-04-212-885

25. Strut 1 Forward Torque Box
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-085
(1) Do the zonal inspection.

TASK 05-41-04-212-886

26. Strut 2 Forward Torque Box
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-086
(1) Do the zonal inspection.

OUTER WING ZONAL SCHEDULED MAINTENANCE - MAINTENANCE PRACTICES

TASK 05-41-05-212-801

1. Left Wing Leading Edge to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-05-212-802

2. Left Wing Leading Edge to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-05-212-803

3. Left Wing Leading Edge to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-05-212-804

4. Inboard Slat (No. 6) - Left Wing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-004
      (1) Do the zonal inspection.

TASK 05-41-05-212-805

5. Left Wing Leading Edge to Front Spar - Outboard
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-005
(1) Do the zonal inspection.

TASK 05-41-05-212-806

6. Left Wing Leading Edge to Front Spar - Outboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-05-212-807

7. Outboard Slat (No. 5) - Left Wing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-05-212-808

8. Outboard Slat (No. 5) - Left Wing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-05-212-809

9. Outboard Slat (No. 4) - Left Wing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-05-212-810

10. Outboard Slat (No. 4) - Left Wing
    A. General
       (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-010
(1) Do the zonal inspection.

TASK 05-41-05-212-811
11. Outboard Slat (No. 3) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-011
(1) Do the zonal inspection.

TASK 05-41-05-212-812
12. Outboard Slat (No. 3) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-012
(1) Do the zonal inspection.

TASK 05-41-05-212-813
13. Outboard Slat (No. 2) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-013
(1) Do the zonal inspection.

TASK 05-41-05-212-814
14. Outboard Slat (No. 2) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-014
(1) Do the zonal inspection.

TASK 05-41-05-212-815
15. Outboard Slat (No. 1) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-015
(1) Do the zonal inspection.

TASK 05-41-05-212-816
16. Outboard Slat (No. 1) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-016
(1) Do the zonal inspection.

TASK 05-41-05-212-817
17. Center Auxiliary Tank - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-017
(1) Do the zonal inspection.

TASK 05-41-05-212-818
18. Main Tank (Inboard of Rib 10) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 05-41-05-212-819
19. Dry Bay - Inboard Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-019
(1) Do the zonal inspection.

TASK 05-41-05-212-820
20. Main Tank (Outboard of Rib 10) - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-020
(1) Do the zonal inspection.

TASK 05-41-05-212-821
21. Surge Tank - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-021
(1) Do the zonal inspection.

TASK 05-41-05-212-822
22. Wingtip - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-022
(1) Do the zonal inspection.

TASK 05-41-05-212-823
23. Rear Spar to MLG Support Beam - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-023
(1) Do the zonal inspection.

TASK 05-41-05-212-824
24. Left MLG Support Beam and Rear Spar to Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-024
(1) Do the zonal inspection.

TASK 05-41-05-212-825
25. Inboard Trailinig Edge Flap - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-025
(1) Do the zonal inspection.

TASK 05-41-05-212-826
26. Inboard Aileron - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-026
(1) Do the zonal inspection.

TASK 05-41-05-212-827
27. Rear Spar to Wing Trailing Edge - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-027
(1) Do the zonal inspection.

TASK 05-41-05-212-828
28. Outboard Aileron - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-028
(1) Do the zonal inspection.

TASK 05-41-05-212-829
29. Outboard Aileron - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-029
(1) Do the zonal inspection.

TASK 05-41-05-212-830
30. Outboard Flap Support Fairing - Left Inboard Flap
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-030
(1) Do the zonal inspection.

TASK 05-41-05-212-831

31. Inboard Flap Support Fairing - Left Outboard Flap
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-031
(1) Do the zonal inspection.

TASK 05-41-05-212-832

32. Outboard Flap Support Fairing - Left Outboard Flap
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-032
(1) Do the zonal inspection.

TASK 05-41-05-212-833

33. Krueger Flap - Left Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-033
(1) Do the zonal inspection.

ENGINE ZONAL INSPECTION - MAINTENANCE PRACTICES

TASK 05-41-06-212-801

1. Right Wing Leading to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-06-212-802

2. Right Wing Leading to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-06-212-803

3. Right Wing Leading to Front Spar - Inboard
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-06-212-804

4. Inboard Slat (No. 7) - Right Wing
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-004
      (1) Do the zonal inspection.

TASK 05-41-06-212-805

5. Right Wing Leading to Front Spar - Outboard
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-005
(1) Do the zonal inspection.

TASK 05-41-06-212-806
6. Right Wing Leading to Front Spar - Outboard
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-06-212-807
7. Outboard Slat (No. 8) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-06-212-808
8. Outboard Slat (No. 8) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-06-212-809
9. Outboard Slat (No. 9) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-06-212-810
10. Outboard Slat (No. 9) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-010
(1) Do the zonal inspection.

TASK 05-41-06-212-811
11. Outboard Slat (No. 10) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-011
(1) Do the zonal inspection.

TASK 05-41-06-212-812
12. Outboard Slat (No. 10) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-012
(1) Do the zonal inspection.

TASK 05-41-06-212-813
13. Outboard Slat (No. 11) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-013
(1) Do the zonal inspection.

TASK 05-41-06-212-814
14. Outboard Slat (No. 11) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-014
(1) Do the zonal inspection.

TASK 05-41-06-212-815
15. Outboard Slat (No. 12) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-015
(1) Do the zonal inspection.

TASK 05-41-06-212-816
16. Outboard Slat (No. 12) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-016
(1) Do the zonal inspection.

TASK 05-41-06-212-817
17. Center Auxiliary Tank - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-017
(1) Do the zonal inspection.

TASK 05-41-06-212-818
18. Main Tank (Inboard of Rib 10) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 05-41-06-212-819
19. Dry Bay - Inboard Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-019
(1) Do the zonal inspection.

TASK 05-41-06-212-820
20. Main Tank (Outboard of Rib 10) - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-020
(1) Do the zonal inspection.

TASK 05-41-06-212-821

21. Surge Tank - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-021
(1) Do the zonal inspection.

TASK 05-41-06-212-822

22. Wingtip - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-022
(1) Do the zonal inspection.

TASK 05-41-06-212-823

23. Rear Spar to MLG Support Beam - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-023
(1) Do the zonal inspection.

TASK 05-41-06-212-824

24. Right MLG Support Beam and Rear Spar to Trailing Edge
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-024
(1) Do the zonal inspection.

TASK 05-41-06-212-825

25. Inboard Trailing Edge Flap - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-025
(1) Do the zonal inspection.

TASK 05-41-06-212-826
26. Inboard Aileron - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-026
(1) Do the zonal inspection.

TASK 05-41-06-212-827
27. Rear Spar to Wing Trailing Edge - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-027
(1) Do the zonal inspection.

TASK 05-41-06-212-828
28. Outboard Aileron - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-028
(1) Do the zonal inspection.

TASK 05-41-06-212-829
29. Outboard Aileron - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-029
(1) Do the zonal inspection.

TASK 05-41-06-212-830
30. Outboard Flap Support Fairing - Right Inboard Flap
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-030
(1) Do the zonal inspection.

TASK 05-41-06-212-831

31. Inboard Flap Support Fairing - Right Outboard Flap
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-031
(1) Do the zonal inspection.

TASK 05-41-06-212-832

32. Outboard Flap Support Fairing - Right Outboard Flap
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-032
(1) Do the zonal inspection.

TASK 05-41-06-212-833

33. Krueger Flap - Right Wing
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-033
(1) Do the zonal inspection.

ENGINE ZONAL INSPECTION - MAINTENANCE PRACTICES

TASK 05-41-07-212-801

1. Nose Landing Gear
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-07-212-802

2. Left Main Landing Gear
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-07-212-803

3. Right Main Landing Gear
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

ENGINE ZONAL INSPECTION - MAINTENANCE PRACTICES

TASK 05-41-08-212-801

1. Bulk Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-001
      (1) Do the zonal inspection.

TASK 05-41-08-212-802

2. Bulk Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-002
      (1) Do the zonal inspection.

TASK 05-41-08-212-803

3. Forward Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-003
      (1) Do the zonal inspection.

TASK 05-41-08-212-805

4. Forward Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

      S 212-005
      (1) Do the zonal inspection.

TASK 05-41-08-212-806

5. Aft Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-006
(1) Do the zonal inspection.

TASK 05-41-08-212-807

6. Aft Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-007
(1) Do the zonal inspection.

TASK 05-41-08-212-808

7. Passenger Cabin Door - Forward Entry
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-008
(1) Do the zonal inspection.

TASK 05-41-08-212-809

8. Overwing Emergency Exit - Left
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-009
(1) Do the zonal inspection.

TASK 05-41-08-212-810

9. Overwing Emergency Exit - Right
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Zonal inspection

S 212-010
(1) Do the zonal inspection.

TASK 05-41-08-212-811

10. Overwing Emergency Exits - Left
    A. General
       (1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-011
(1) Do the zonal inspection.

TASK 05-41-08-212-812

11. Overwing Emergency Exits - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-012
(1) Do the zonal inspection.

TASK 05-41-08-212-815

12. Overwing Emergency Exit - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-015
(1) Do the zonal inspection.

TASK 05-41-08-212-816

13. Overwing Emergency Exit - Right
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-016
(1) Do the zonal inspection.

TASK 05-41-08-212-817

14. Overwing Emergency Exits - Left
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-017
(1) Do the zonal inspection.

TASK 05-41-08-212-818

15. Overwing Emergency Exits - Right
A. General
(1) This procedure is a scheduled maintenance task.

B. Zonal inspection

S 212-018
(1) Do the zonal inspection.

TASK 05-41-08-212-821

16. Passenger Cabin Door - Aft Entry
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-021
(1) Do the zonal inspection.

TASK 05-41-08-212-823

17. Passenger Cabin Door - Forward Service
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-023
(1) Do the zonal inspection.

TASK 05-41-08-212-824

18. Passenger Cabin Door - Aft Service
A. General
(1) This procedure is a scheduled maintenance task.
B. Zonal inspection

S 212-024
(1) Do the zonal inspection.

CONDITIONAL INSPECTIONS - DESCRIPTION AND OPERATION

1. General
   A. This section contains recommended checks and inspections which are due to special or unusual conditions. The types of conditional inspections are as follows:
      (1) Hard Landing or High Drag/Side Load Landing (AMM 05-51-01)
      (2) Severe or Unusual Turbulence, Buffet, or Speeds More than the Design Limits (AMM 05-51-04)
      (3) Landing Gear Down Overspeed Condition (AMM 05-51-07)
      (4) Flap/Slat Down Overspeed Condition (AMM 05-51-08)
      (5) Overweight Taxi Condition (AMM 05-51-09)
      (6) Dragged Engine Nacelle/Engine Seizure/Engine and Strut Damage Condition (AMM 5-51-10)
      (7) High Energy Stop/Heat Damage Condition (AMM 05-51-14)
      (8) Brake Seizure (AMM 05-51-15)
      (9) Burst/Flat Spotted Tires (AMM 05-51-16)
      (10) Wheel Bearing Failure/Damage Condition (AMM 05-51-17)
      (11) Bird/Hail Strike Condition (AMM 05-51-18/201)
      (12) Lightning Strike Condition (AMM 05-51-19)
      (13) Battery Electrolyte Contamination Condition (AMM 05-51-20)
      (14) Mercury Spillage Condition (AMM 05-51-21)
      (15) Fire Resistant Hydraulic Fluid Reaction with Titanium (AMM 05-51-22)
      (16) Excessive Cabin Pressure Leakage (AMM 05-51-24)
      (17) Conditioned Air Pack Outlet Duct System Failure Condition (AMM 05-51-25)
      (18) Extreme Dust Condition (AMM 05-51-27)
      (19) Ice or Snow Condition (AMM 05-51-28)
      (20) Exceeding Maximum Nose Landing Gear Towing Angle or Maximum Towing Load Condition (AMM 05-51-29)
      (21) Volcanic Ash Condition (AMM 05-51-31)
      (22) Tail/Tail Skid Drag (AMM 05-51-32)
      (23) Landing Gear Alternate Extension Condition (AMM 05-51-33)
      (24) FOR AIRPLANES WITH GE CF6 SERIES ENGINES ONLY; Holding or Descent in Moderate to Severe Icing Conditions (AMM 05-51-34)
      (25) Overweight Landing (AMM 05-51-35)

(26) Airframe Vibration Condition (AMM 05-51-38)
(27) Engine Blade Out Damage Condition (AMM 05-51-42)
(28) Acid Spill Condition (AMM 05-51-57)

HARD LANDING OR HIGH DRAG/SIDE LOAD LANDING CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. Hard Landing
      (1) The hard landing procedure is for hard landings at any landing weight.
         (a) If the landing is also overweight, the Overweight Landing Conditional Inspection, plus the Hard Landing Conditional Inspection, must be done as defined in the respective procedures. If damage is found in the Phase I Conditional Inspection of either procedure, then both Hard Landing and Overweight Landing Conditional Inspection Phase II inspections must be done.

            NOTE: For a hard landing that is overweight, the peak recorded vertical acceleration can be significantly less than the G-level thresholds provided for landings at or below the design landing weight.

            NOTE: When both the Hard Landing Conditional Inspection, and the Overweight Landing Conditional Inspections, as defined above, must be done, it is not necessary to do duplicative tasks twice, such as: Landing gear, nacelle struts, fuselage, wing LE fairings, horizontal stab, cargo area, engine inspection, flight controls, etc.

      (2) If the pilot determines the airplane had a hard landing, a structural inspection is necessary.
         (a) For landing at or below the maximum design landing weight on airplanes with flight data recording systems capable of at least eight (8) samples per second, the following can be used: An indication of a hard landing on the main landing gear is a peak recorded vertical acceleration that exceeds 1.8 G (incremental 0.8 G). This vertical accelerometer data must be measured by the flight data recorder accelerometer at a data sampling rate of at least eight (8) samples per second. This vertical acceleration G-level threshold is valid for a conventional landing with impact with no more than two (2) degrees of airplane roll, main landing gear touchdown first and normal rotation onto the nose gear. For a hard landing that is a hard nose landing or is accompanied by more than two (2) degrees of roll at the time of main landing gear impact, the recorded peak acceleration can be significantly less than 1.8 G, but a hard landing inspection may still be necessary.

B. High Drag/Side Load Landing
(1) When the airplane lands and if the conditions shown below occur, the airplane had a high drag/side load landing. If this does occur, do a Phase I examination.
(a) The airplane skidded or overran the prepared surface and went to an unprepared surface.
(b) The airplane landed short of the prepared surface.
(c) The airplane made a landing where two or more tires were blown.
(d) The airplane skidded on the runway sufficiently to make you think damage occurred.

C. The Examination
(1) The examination is divided into two phases (Phase I and Phase II).
(a) The Phase I examination is applicable when conditions occur that show a Hard Landing or a High Drag/Side Load Landing.
(b) If the examination during Phase I does not show that damage has occurred, more examination is not necessary. If the Phase I examination shows that damage has occurred, Phase II must be done.
(2) You must disassemble, clean, and examine all components (landing gear, engine nacelle, etc.) that get contamination (mud, salt water, etc.).

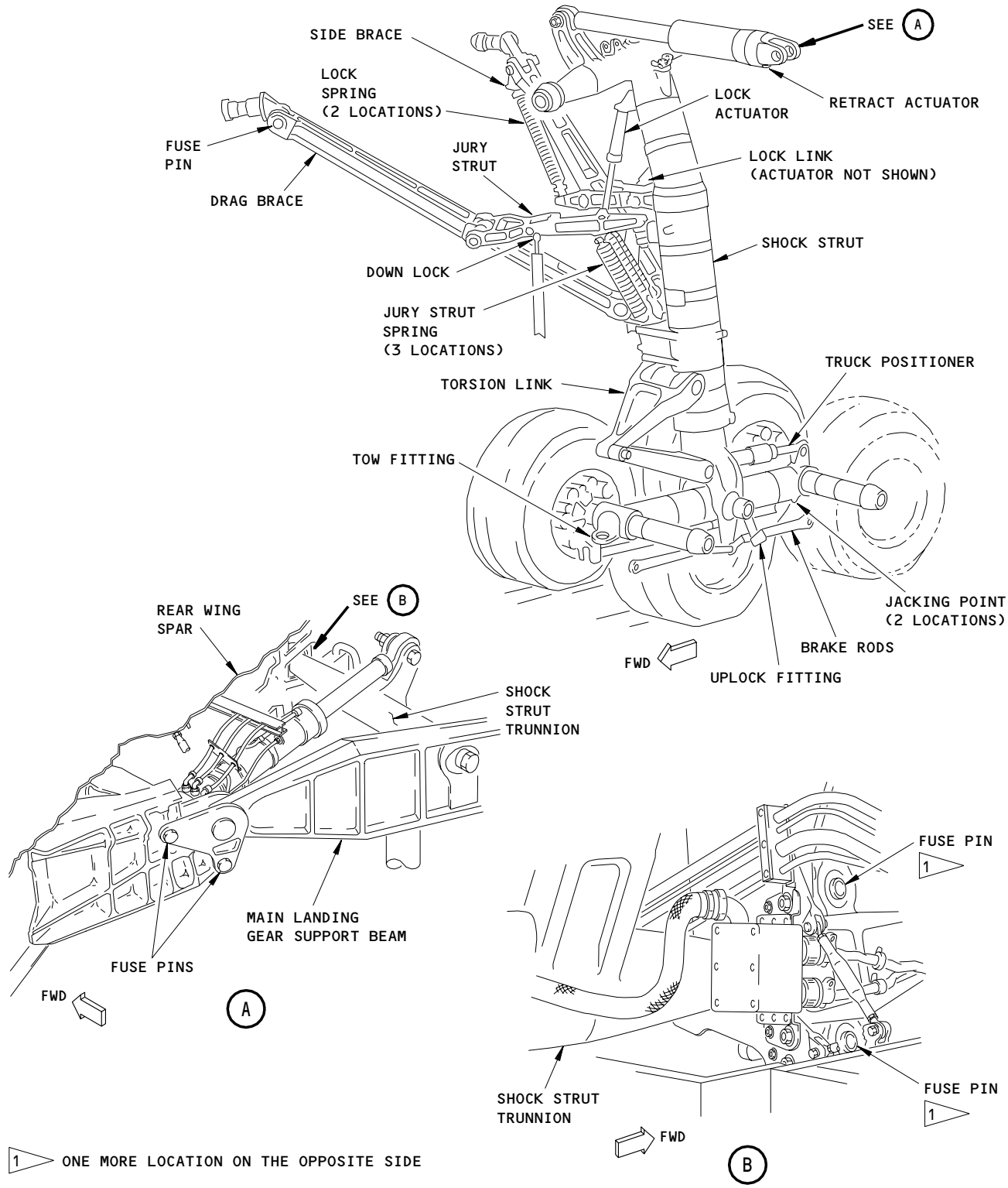
TASK 05-51-01-212-029

2. Hard Landing or High Drag/Side Load Landing Condition

A. Inspection guidelines

S 212-033

(1) When the conditional inspection tells you to examine a component, look for these conditions (replace or repair the components, if necessary):
(a) Cracks
(b) Creases or cracks in the skin or web
(c) Skin wrinkling that crosses a line of fasteners
(d) Pulled apart structure
(e) Loose paint (paint flakes)



Main Gear
Figure 201

(f) Twisted parts (distortion)
(g) Bent components
(h) Fastener holes that have become larger or longer
(i) Loose fasteners
(j) Fasteners that have pulled out or are gone
(k) Delaminations
(l) Misalignment
(m) Interference
(n) Other signs of damage.

B. When the conditional inspection tells you to "examine" a fuse pin, use one of the following inspection methods:

S 212-034

(1) Fuse pin inner diameter distortion inspection, method number 1.
(a) Access the fuse pin that is to be inspected.
1) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
(b) Remove the bolt that goes through the fuse pin and the end caps of the fuse pin that is going to be inspected.
(c) Clean the grease away from the inner diameter of the fuse pin.
(d) Use a straight edge or an equivalent device and look for distortion of the inner diameter of the fuse pin.
1) If you find damage in the diagonal brace fuse pin (aft pin), do the same inspection for the upper link fuse pin.

S 212-035

(2) Fuse pin joint rotation inspection, method number 2.
(a) Remove the load from the joint that has the fuse pin to be inspected.
(b) Access the fuse pin that is to be inspected.
1) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
(c) Rotate the fuse pin. If the fuse pin is free to rotate, no damage exists.

S 212-036

(3) Fuse pin partial removal and binding inspection, method number 3.
(a) Remove the load from the joint that has the fuse pin to be inspected.
(b) Access the fuse pin that is to be inspected.
1) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
(c) Pull the fuse pin out 0.5 inches (12.7 mm). If the fuse pin is free to slide in and out of the lugs, no damage exists.

TASK 05-51-01-212-001

3. Phase I Examination

A. Main Landing Gear Areas

S 212-002

(1) Examine the main landing gear areas as follows:

(a) Examine the main landing gear tires for damage.

(b) Examine the main landing gear wheels for cracks.

(c) Examine the main landing gear shock strut at the top and bottom ends for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

(d) Examine the main landing gear strut doors and linkage for distortion, cracks or other types of damage.

(e) Examine the main gear trunnion and shock strut top end for cracks.

(f) Examine the main gear drag strut, and side strut attach fitting for distortion or cracks.

(g) Examine the inside diameter of the fuse pins for the drag strut and gear beam outboard end for distortion.

(h) Examine the landing gear beam to rear spar:

1) Attachment fittings.

2) Upper and lower skin panels around the spar attachment fittings.

(i) Examine the landing gear trunnion to rear spar attachment.

(j) Examine the landing gear trunnion to landing gear beam attachment.

(k) Examine the inside diameter of the fuse pins at the landing gear trunnion to rear spar attachment.

(l) Examine the main landing gear beam to body attachment (support link).

1) Look at the inside diameter of the hollow pins that attach the main landing gear beam to the side of body link. Look for distortion.

(m) Examine the main landing gear truck positioning mechanism and linkage for distortion, cracks or other signs of damage.

(n) Examine the main landing gear truck beams for distortion, cracks and other types of damage.

B. Nose Landing Gear Areas

S 212-003

(1) Examine the nose landing gear areas as follows:

(a) Examine the nose wheel well for buckled skin, paint that has flaked, and for cracks. Also look for fasteners that have pulled out, or are not in the web of the nose wheel well. Look carefully in the area near the trunnion and the drag strut support fittings.

(b) Examine the nose landing gear tires for damage.

(c) Examine the nose landing gear wheels for cracks.
(d) Examine the nose landing gear shock strut at the top and bottom ends for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

(e) Examine the nose landing gear outer cylinder for distortion, cracks, paint that has flaked, or other types of damage.

C. Fuselage and Wing Areas

S 212-004

(1) Examine the fuselage and wing areas as follows:
(a) Examine the Nacelles and Nacelle-Struts components that follow:

NOTE: Do a general visual inspection for obvious damage, (AMM 54-51-00/1, AMM 54-51-01/401, AMM 54-52-00/1, AMM 54-52-01/401, AMM 54-53-00/1).

NOTE: If no damage is found in other parts of this inspection, while required, the Inspection of the Mid Spar Fuse Pins, and the Upper Link Fuse Pins can be deferred for up to 150 flights (cycles).

1) The strut to wing fairing.
2) The pylon panels.
3) The pylon doors.
4) The strut skins (cut outs around edges; inner and outer surfaces).
5) The nacelle cowlings.

(b) Open the trailing edge fairing door and remove the strut access panels.
(c) Remove the gap cover above the upper link.
(d) Remove the trailing edge panels (AMM 57-51-10/401).
(e) Examine the internal strut areas that follow:

NOTE: Examine the bulkhead area of the AFT engine mount carefully.

NOTE: Examine the strut midspar carefully.

1) Bulkhead chords.
2) Bulkhead skins.

(f) Examine the areas of the struts that follow, for damage:
1) Midspar attachment area:
- strut midspar fitting
- under wing fittings
- fuse pins
- lugs
- engine mounts and adjacent structure
- attachment hardware
- all other structure in this area.
2) Diagonal brace area:
- diagonal brace assembly
- strut attach fitting
- wing attach fitting
- lugs
- bushings
- fuse pins/bolts (aft pin only)
- all other structure in this area.
3) Upper link area:
- upper link assembly
- strut attach fitting
- wing attach fitting
- bushings
- lugs
- fuse pins/bolt (forward pin only)
- wing leading edge beam located above each engine strut.
- strut to wing fairing
- all other structure in this area.

4) Examine all engine mounts and adjacent structure.
5) If you think there is possible engine damage or seizure, remove the engine, if it is necessary.

(g) Examine the wing-to-body fairing at the wing leading edge for movement from its usual position. Look for fastener hole elongation or tear out, and cracks in the skin. Also look for fasteners that have pulled out or are not there.

(h) Examine the lower fuselage structure (body sections 46 and 48) for signs that the runway was touched.

(i) ON 767-300 AIRPLANES;
if the landing causes a hard impact on the nose gear, do the steps that follow:
1) Examine the fuselage skin panels between stringers 8 Left and 8 Right.
a) Do this along the entire Section 43 (Station 434 to Station 786).
b) Look for buckles, wrinkles, tears, cracks, flaked paint or missing fasteners.

(j) Perform a general visual inspection of fuselage.
1) If obvious damage is found during general visual inspection, do an RVSM check.

D. Cabin Inspections

S 212-024

(1) Do a visual inspection of all ceiling panels for dislodging and evidence do to impact damage.

S 212-028

(2) Continue the Cabin Inspection in the Phase II inspection if any cabin damage was found in the above Cabin Inspection including the ceiling panels, central overhead bins, or the video monitors. If no damage was found, no further cabin inspection is required and it is not necessary to continue the Cabin Inspection in Phase II.

TASK 05-51-01-212-005

4. Phase II Examination

A. References

(1) AMM 05-51-10/201, Dragged Engine Nacelle/Engine Seizure/Engine and Strut Damage Condition
(2) AMM 07-11-01/201, Jacking Airplane
(3) AMM 27-00-00/001, Flight Controls
(4) AMM 27-11-00/501, Aileron and Aileron Trim Control
(5) AMM 27-21-00/501, Rudder and Rudder Trim Control System
(6) AMM 27-31-00/501, Elevator Control System
(7) AMM 27-41-00/501, Horizontal Stabilizer Trim Control System
(8) AMM 27-51-00/501, Trailing Edge Flap System
(9) AMM 27-61-00/501, Spoiler/Speedbrake Control System
(10) AMM 27-81-00/501, Leading Edge Slat System
(11) AMM 32-11-01/601, Main Gear
(12) AMM 32-11-02/401, Main Landing Gear Shock Strut
(13) AMM 32-21-01/601, Nose Gear
(14) AMM 32-21-25/201, Nose Gear Shock Strut Seals
(15) AMM 32-32-00/501, Main Landing Gear Extension and Retraction
(16) AMM 32-34-00/501, Nose Landing Gear Extension and Retraction
(17) AMM 32-51-00/501, Nose Wheel Steering System

B. Examine the Airplane Structure

S 722-006

(1) Landing Gear Test
(a) Do a test of the main and nose landing gear. Look for signs of interference, misalignment, or distortion.
1) Jack the airplane (AMM 07-11-01/201).
2) Retract and extend the main landing gear (AMM 32-32-00/501).
3) Retract and extend the nose landing gear (AMM 32-34-00/501).

C. Main Landing Gear Areas

S 212-010

(1) Examine the main landing gear areas as follows (AMM 32-11-01/601):
(a) Examine the outer and inner cylinder lugs for distortion, cracks and other types of damage.

(b) Examine the drag strut linkage for cracks or other types of damage.
(c) Examine the gear side strut linkage for cracks or other types of damage.
(d) Look at the hydraulic fluid levels in the shock struts. Make sure that the levels are correct.
1) If a high drag or side load landing, and a hard landing occur at the same time, remove the main gear inner cylinders. Do this also if the shock strut hydraulic fluid is low. Look for distortions or cracks.
(e) Examine the drag strut for cracks, distortion, and other types of damage.
(f) Examine the side strut and side strut attachments for cracks or other types of damage.
(g) Examine all of the bolts and pin connections in the main gear for distortion.
(h) Examine the main landing gear truck positioning mechanism, and the linkage for cracks and other types of damage.
(i) Examine the main landing gear truck beams for distortion, cracks, or other types of damage.
(j) Examine the outer cylinder trunnions for damage, cracks, distortion.
(k) If any main landing gear wheels are removed because of a blown tire, do the steps that follow:
1) Examine the wheel structure for cracks.
2) Examine the brake assembly for damage.

D. Nose Landing Gear Areas

S 212-011

(1) Examine the nose landing gear areas as follows (AMM 32-21-01/601):
(a) Examine the nose landing gear wheel well for buckled skin, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not in the web of the nose wheel well. Look carefully in the areas near the trunnion and the drag strut support fittings.
(b) Examine the nose landing gear drag strut support fittings for paint that has flaked and for distortion, and cracks. Also look for fasteners that have pulled out, or for fasteners that are not there.
(c) Examine the nose landing gear outer cylinder trunnion fitting area and the drag brace linkage. Look for cracks, paint that has flaked, and bent parts. Also look for fasteners that have pulled out, or for fasteners that are not there.
(d) Make sure the nose landing gear shock strut pressure is normal. Make sure the hydraulic fluid is at the correct level (AMM 32-21-25/201).
1) If the last two steps show signs of possible damage, remove the nose landing gear inner cylinder and examine it for cracks and other types of damage.

(e) If a high drag/side load landing or a hard landing occurs and the nose landing gear hits hard, remove the nose landing gear inner cylinder. Examine the inner cylinder for distortion, cracks and other types of damage.

S 722-012

(2) Make sure the nose wheel steering system operates correctly and the steering mechanism is rigged correctly (AMM 32-51-00/501).

E. Fuselage and Wing Areas

S 212-013

(1) Examine the fuselage and wing areas as follows:
   (a) Examine the lower fuselage structure for skin that has buckled, and paint that has flaked. Also look for cracks, and for fasteners that have pulled out or are not there. Look carefully at the area below the body floor beams, just aft of the wing center section.
   (b) Examine the wing-to-fuselage joints at the wheel well bulkheads for cracks and other types of damage. Look for paint that has flaked, and fasteners that have pulled out or are not there.
   (c) Examine the upper fuselage structure above the primary wing spars for buckled structure, cracks and paint that has flaked. Also look for fasteners that have pulled out or are not there.
   (d) Examine the main landing gear wheel well bulkheads for buckled structure, cracks, paint that has flaked and other types of damage. Also look for fasteners that have pulled out or are not there.
   (e) Examine the side-of-body ribs for cracks in the area of the rear spar.
   (f) Examine the rear spar for permanent buckles between the tank end and the side of the body.
   (g) Examine the nose landing gear wheel well aft bulkhead for buckled structure. Look for cracks, paint that has flaked, and fasteners that have pulled out or are not there.
   (h) Examine the fuselage structure immediately outboard of the nose wheel well. Look for cracks, paint that has flaked, and fasteners that have pulled out or are not there.
   (i) Examine the fuselage skin attachments above the landing gear beam for distortion. Also look for paint that has flaked, cracks, and fasteners that have pulled out or are not there.
   (j) Look for signs of fuel leaks or other fluids leaking in the areas that follow:
      1) The wing
      2) The nacelles
      3) The engine struts
      4) The external surfaces of the fuselage
      5) The nose landing gear wheel well
      6) The main landing gear wheel well.

(k) Examine the lower fuselage (body sections 46 and 48) for signs that it touched the runway. If there are signs of damage, examine the areas that follow. Look for broken, bent, out of shape parts, or other types of damage:
1) The APU firewall
2) The APU drain
3) The APU doors
4) The drain mast
5) The lower fuselage skin, stringers, frames, and shear ties.

S 712-014
(2) Make sure that the flight controls move freely (AMM 27-21-00/501, AMM 27-31-00/501, AMM 27-41-00/501, AMM 27-51-00/501, AMM 27-61-00/501, AMM 27-81-00/201).

S 222-015
(3) Make sure that the flight control cables have the correct tension (Ref AMM 27-00-01/001).

S 212-018
(4) Do the Dragged Engine Nacelle inspection procedure (Ref AMM 05-51-10/201).

F. Cargo Loading Areas

S 212-016
(1) Make sure that the cargo loading system for containers and pallets operates correctly.
(a) Examine the side guides, seat tracks, pallet locks and rollers for breaks, cracks, and retaining lips that are not there.
(b) Make sure that the rollers (where installed) move freely.

S 212-017
(2) Examine the cargo restraint system in all cargo compartments.

G. Cabin Inspections

S 212-027
(1) Continue the following inspection if any cabin damage was found in the Phase I Cabin Inspection including the ceiling panels, central overhead bins, or the video monitors. If no damage was found, no further cabin inspection is required and it is not necessary to continue this Cabin Inspection.
(a) If ceiling panels without video monitors are found dislodged or damaged: Check for proper latching and installation. Repair as necessary.
(b) Inspect all tie rods of affected zones for evidence of buckling or rupture. If any defect is found, replace as necessary.
(c) Examine lavatory tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.
(d) Examine the lavatory floor fittings for damage consisting of breakage, cracks, and deformation.

(e) Examine galley tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.

(f) Examine the galley floor fittings for damage consisting of breakage, cracks, and deformation.

(g) Examine closet tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.

(h) Examine the closet floor fittings for damage consisting of breakage, cracks, and deformation.

H. Put the Airplane Back to its Usual Condition.

S 942-019

(1) Lower the airplane off of the jacks (Ref AMM 07-11-01/201).

SEVERE OR UNUSUAL TURBULENCE, STALL, BUFFET, OR SPEEDS MORE THAN THE DESIGN LIMITS CONDITION (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

1. General
   A. The structural examination in this subject is applicable after a severe or unusual turbulence or buffet condition. It also applies to stalls (after the initial buffet or stick shaker condition), or if the airplane speed is more than the design speed.

TASK 05-51-04-212-001

2. Severe or Unusual Turbulence, Buffet, or Speeds More than the Design Limits Conditional Inspection
   A. References
      (1) AMM 05-51-10/201, Dragged Engine Nacelle/Engine Seize and Strut Damage
      (2) AMM 06-42-00/201, Empennage Access Doors and Panels
      (3) AMM 27-11-00, Ailerons
      (4) AMM 27-21-00, Rudder
      (5) AMM 27-31-00, Elevators
      (6) AMM 27-51-00, Trailing Edge Flaps
      (7) AMM 32-51-00/501, Nose Wheel Steering System
      (8) AMM 27-61-00, Spoiler and Drag Devices
      (9) AMM 27-81-00, Lift Augmentation
      (10) AMM 27-81-00/201, Leading Edge Slat System
   B. Inspection guidelines

      S 212-036
      (1) The data that follows applies to a severe or unusual turbulence condition and the pilot must make a decision if a structural inspection is necessary.

      NOTE: If an inspection is necessary, refer to "Examine the Airplane Structure" and "Cabin Inspection" in this section.

      NOTE: Severe turbulence is identified as turbulence which causes large, abrupt changes in the altitude and/or attitude. The airplane could be out of control for short periods. It usually causes large variations in airspeed. Passengers and crew are moved violently against their seat belts and loose objects are moved around the airplane.

      (a) The flight maneuvering vertical load acceleration limits that follow are specified in the FAA Flight Manual, Section I. If these flight maneuvering vertical load acceleration limits are exceeded, refer to the Examine Airplane Structure procedure in this section.
         1) Flaps up . . . . . 2.5g to -1.0g

2) Flaps down . . . . . 2.0g to -0.0g

NOTE: With flaps 25 and 30, positive limits vary linearly from +2.0g at maximum landing weight to +1.5g at maximum take off weight.

NOTE: These flight maneuvering vertical load acceleration limits are not directly applicable to severe or unusual turbulence. Severe or unusual turbulence inspections may be required for conditions that do not exceed these limits.

S 212-032

(2) The data that follows applies to a severe or unusual buffet condition:
   (a) If an unusual maneuver or a severe or unusual buffet condition occurs in flight, do the Examine Airplane Structure in this section. Also do this examination if an unusual vibration occurs in flight.
   (b) If a stall occurs after the initial buffet or stick shaker condition, a part of the structural examination is necessary. Do the examination in the Stall (After initial buffet or stick shaker) Examination procedure in this section.

S 212-033

(3) The data that follows applies to airplane speeds greater than the design speeds:
   (a) The maximum design speed of the airplane for usual flight operations is the Maximum Operating Limit Speed. The Maximum Operating Limit Speed is found in Section 1, LIMITATIONS of the airplane Flight Manual. The aural warning horn will operate at this speed condition.
   (b) If the airplane speed is 20 knots or more than Vmo, or 0.02 mach or more above Mmo, do the "Examine Airplane Structure" procedure in this section.

S 212-034

(4) When the conditional inspection tells you to "examine" a component, look for these conditions (replace or repair the components, if necessary):
   (a) Cracks
   (b) Creases or cracks in the skin or web

(c) Skin wrinkling that crosses a line of fasteners
(d) Pulled apart structure
(e) Loose paint (paint flakes)
(f) Twisted parts (distortion)
(g) Bent components
(h) Fastener holes that have become larger or longer
(i) Loose fasteners
(j) Fasteners that have pulled out or are gone
(k) Delaminations
(l) Misalignment
(m) Interference
(n) Other signs of damage.

S 212-035

(5) When the conditional inspection tells you to "examine" a fuse pin, use one of the following inspection methods:
(a) Fuse pin inner diameter distortion inspection, method number 1.
1) Access the fuse pin that is to be inspected.
a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
2) Remove the bolt that goes through the fuse pin and the end caps of the fuse pin that is going to be inspected.
3) Clean the grease away from the inner diameter of the fuse pin.
4) Use a straightedge or an equivalent device and look for distortion of the inner diameter of the fuse pin.
a) if you find damage in the diagonal brace fuse pin (aft pin), do the same inspection for the upper link fuse pin.
(b) Fuse pin joint rotation inspection, method number 2.
1) Remove the load from the joint that has the fuse pin to be inspected.
2) Access the fuse pin that is to be inspected.
a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
3) Rotate the fuse pin. If the fuse pin is free to rotate, no damage exists.
(c) Fuse pin partial removal and binding inspection, method number 3.
1) Remove the load from the joint that has the fuse pin to be inspected.
2) Access the fuse pin that is to be inspected.
a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).
3) Pull the fuse pin out 0.5 inches (12.7 mm). If the fuse pin is free to slide in and out of the lugs, no damage exists.

C. Examine Airplane Structure and Wing Areas

S 862-002

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE FLAP/SLAT ACTUATION SYSTEMS. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE FLAPS/SLATS MOVE. FLAP/SLAT ACTUATION SYSTEMS MUST NOT BE OPERATED DURING THIS INSPECTION. FAILURE TO OBEY CAN CAUSE INJURY TO PERSONS.

(1) Do the deactivation procedure for the trailing edge flap system (AMM 27-51-00/201).

S 862-003

(2) Do the deactivation procedure for the leading edge slat system (AMM 27-81-00/201).

S 212-038

(3) Examine the external surface of the lower keel beam below the wing for distortion, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not there.
   (a) If any external damage if found, examine all of the internal primary structure in the damaged areas. Look for distortion, paint that is flaked, for cracks, and for fasteners that have pulled out or are not there. Wrinkles in the keel beam vertical web are normal.

S 212-039

(4) Examine the fuselage area above the trailing edge part of the wing (aft of the wing rear spar) for distortion, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not there.
   (a) If any external damage is found, examine all of the internal primary structure in the damaged areas. Look for distortion, paint that is flaked, for cracks, and for fasteners that have pulled out or are not there. Wrinkles in the keel beam vertical web are normal.

S 212-040

(5) Examine the fuselage, section 46 lower lobe for distortion, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not there.
   (a) If any external damage is found, examine all of the internal primary structure in the damaged areas. Look for distortion, paint that is flaked, for cracks, and for fasteners that have pulled out or are not there. Wrinkles in the keel beam vertical web are normal.

S 212-041

(6) Examine the complete empennage, section 48 for distortion, paint that has flaked and for cracks. Also look for fasteners that have pulled out or are not there.

(a) If any external damage is found, examine all of the internal primary structure in the damaged areas. Look for distortion, paint that is flaked, for cracks, and for fasteners that have pulled out or are not there. Wrinkles in the keel beam vertical web are normal.

NOTE: A light skin wrinkling or buckling of the lower aft body (between stations 1370 and 1470, below stringer 20L) is a usual condition when the airplane is on its landing gear. But, an apparent increase in the magnitude of these buckling patterns is cause for more internal inspections. This is shown by the formation of sharp creases that usually show between the fasteners.

S 212-042

(7) Examine all of the internal structure of the fuselage, section 48 that you can get access to. Look at the structure from the rear pressure bulkhead to the aft end of the airplane. Look for distortions, paint that has flaked, and cracks. Also look for fasteners that have pulled out or are not there.

(a) Look at the areas that follow:
1) The aft fuselage bulkheads
2) The fin attach fittings
3) The horizontal stabilizer center section
4) The stabilizer hinge fittings
5) The stabilizer jackscrew-mechanism mount fittings and support structure

(b) Look at the jackscrew and hinges for signs of binding.

(c) Inspect the horizontal stabilizer-to-body rubstrips. Look for signs of movement of the structure against the rubstrips. Such movement shows distortion of the structure.

S 212-043

(8) Examine the external surfaces around the top and bottom wing-to-body attachment. This includes the wing to body fairing, and the rear spar web. Look for distortion, cracks, badly chafed areas, and fasteners that have pulled out or are not there.

(a) If external damage is seen, examine the body-to-wing joints, and the landing gear beam-to-body joints. Also examine the upper-wing skin splice for distortion, paint that has flaked, cracks, and for fasteners that have pulled out or are not there.

S 212-053

WARNING: DO NOT ENTER THE WING LEADING EDGE AND TRAILING EDGE AREAS BEFORE YOU INSTALL SAFETY LOCKS. THE LEADING EDGE SLAT AND TRAILING EDGE FLAP SAFETY LOCK PROCEDURES ARE FOUND IN AMM 27-81-00 AND AMM 27-51-00. THIS WILL PREVENT INJURY TO PERSONS FROM ACCIDENTAL FLAP/SLAT OPERATION.

(9) Examine the external surfaces of the wing at the skin splices. Look for misalignment and for rivets that have pulled out or are not there. Also examine the external surface of the top of the wing trailing edge for buckles in the skin.
   (a) If external damage is found, examine all of the internal primary structure in the damaged area that you can get to. Look for distortion, skin that has buckled or cracked, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

S 212-045

(10) Examine the wing control surfaces and the attachments at the front and rear spars. Look for cracks and for rivets that are pulled out or are not there. Also look for signs of binding.
   (a) If external damage is found, do the steps that follow:
      1) Examine the spars for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.
      2) Examine all of the internal primary structure in the damaged area you can get to. Look for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

S 212-046

(11) Examine the landing gear doors and landing gear uplocks for damage. damage. Look for distortion, skin buckling, cracks, paint chips, and loose or missing fasteners.
   (a) If damage is found on the doors or uplocks, all internal primary structure next to and inside the landing gear wheel well should be checked. Look for distortion, skin buckling, cracks, paint chips, and loose or missing fasteners.

S 212-005

(12) Examine the inspection and blowout doors on the lower surface of the wing and the engine pylons. Also examine all inspection and access doors on the lower side of the airplane body. Look for distortion, displacement, broken latches, skin cracks and delaminations. Also look for fasteners that have pulled out or are not there.
   (a) If damage is found, the doors should be opened, and all nearby internal primary structure should be checked. Look for distortion, skin buckling, cracks, paint chips, and loose or missing fasteners.

S 212-006

(13) Examine the wingtip fairings for distortion, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

(a) If damage is found, the wingtip fairing should be removed, and all nearby internal primary structure should be checked. Look for distortion, skin buckling, cracks, paint chips, and loose or missing fasteners.

S 212-019

(14) Examine the horizontal stabilizer external surfaces and rear spar web for signs of buckling. Look at the skin splices for cracks and fasteners that have pulled out or are not there.

(a) If external damage to the horizontal stabilizer is found, do the steps that follow:

1) Examine the spars for distortion, buckling, cracks and paint that has flaked. Also look for fasteners that have pulled out or are not there.

2) Examine the internal primary structure in the damaged area you can get to. Look for distortion, buckling, cracks and paint that has flaked. Also look for fasteners that have pulled out or are not there.

S 212-049

(15) Examine the elevator external surfaces for cracks, fasteners that have pulled out or are not there.

S 212-050

(16) Examine the elevator hinge bearings for signs of binding.

NOTE: Refer to AMM 06-42-00/2 for access panel locations.

S 212-051

(17) Examine the elevator actuator bearings for signs of binding.

(a) If any external damage to the elevator is found, examine the front spar web. Look for distortion, cracks, paint that has flaked, and fasteners that have pulled out or are not there.

S 212-052

(18) Examine the fin external surfaces and rear spar web for signs of buckling. Look at the skin splices for cracks, and fasteners that have pulled out or are not there.

(a) If external damage to the fin is found, examine the internal primary structure in the damaged area you can get to. Look for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

S 212-047
(19) Examine the rudder for signs of buckling. Look at the skin splices for cracks, and fasteners that have pulled out or are not there.
(a) If external damage to the rudder is found, examine the internal primary structure in the damaged area you can get to. Look for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there. do the step that follows:

S 722-007
(20) Make sure the flight controls move freely.
(a) If unusual conditions are found, check all of the flight control force specifications. Also, check the cable tensions. If necessary, refer to the applicable sections that follow:
1) AMM 27-11-00, Ailerons
2) AMM 27-21-00, Rudder
3) AMM 27-31-00, Elevators
4) AMM 27-51-00, Trailing Edge Flaps
5) AMM 27-61-00, Spoilers and Drag Devices
6) AMM 27-81-00, Lift Augmentation

S 212-028
(21) Examine the Nacelles and Nacelle-Struts components that follow:

NOTE: Do a general visual inspection for obvious damage.
(a) The strut to wing fairing.
(b) The pylon panels.
(c) The pylon doors.
(d) The strut skins (cut outs around edges; inner and outer surfaces).
(e) The nacelle cowlings.

S 212-029
(22) Open the trailing edge fairing door and remove the strut access panels.
(a) Examine the internal strut areas that follow:

NOTE: Examine the bulkhead area of the AFT engine mount carefully.

1) Internal strut bulkheads
2) Spars

NOTE: Examine the strut midspar carefully.

3) Bulkhead webs

S 212-030

(23) Examine the areas of the struts that follow for damage:

(a) Midspar attachment area:
- strut midspar fitting
- under wing fittings
- lugs
- engine mounts and adjacent structure
- attachment hardware
- all other structure in this area.

1) If damage to any item in the previous list is found, examine the fuse pins.

(b) Diagonal brace area:
- diagonal brace assembly
- strut attach fitting
- wing attach fitting
- lugs
- bushings
- all other structure in this area.

1) If damage to any item in the previous list is found, examine the fuse pins/bolts (aft pin only).

(c) Upper link area:
- upper link assembly
- strut attach fitting
- wing attach fitting
- bushings
- lugs
- wing leading edge beam located above each engine strut.
- strut to wing fairing
- all other structure in this area.

1) If the damage to any item in the previous list is found, examine the upper link fuse pins/bolts (forward pin only).

S 212-048

(24) Examine all engine mounts and adjacent structure.

(a) If you think there is possible engine damage or seizure, remove the engine, if it is necessary.

(b) If unusual conditions are found, do more engine strut and nacelle examinations. Look at the chapter AMM 05-51-10/201, Dragged Engine Nacelle/Engine Seizure/Engine Strut Damage Condition Maintenance Practices.

S 212-009

(25) Examine the wing, engine nacelles, fuselage external surfaces, and all landing gear wheel wells. Look for signs of fuel leaks or other types of fluid leaks.

(a) If a leak is found, determine the source of the leak and do the appropriate repair.

S 222-010

(26) If flight load accelerations are more than flight manual limits, and the airplane showed signs of much damage following the most recent severe turbulence event, check the airplane alignment.

NOTE: The Alignment Check Procedure is in the Structural Repair Manual.

S 712-011

(27) Check the loading and unloading operation of the containers/pallets.
  (a) Check the cargo restraint system in all of the cargo compartments.
    1) Visually check the side guides, seat tracks, pallet locks and rollers. Look for breaks, retaining lips that are not there, and rollers (where installed) that do not move freely.
  (b) If a malfunction is found, trouble shoot the cargo system. Use the applicable manufacturer's maintenance manual.

D. Stall (After initial buffet or stick shaker) Structural Examination

S 212-012

(1) Examine all of the internal structure of the fuselage, section 48 that you can get access to. Look at the structure from the rear pressure bulkhead to the aft end. Look for distortions, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not there.
  (a) Look at the areas that follow:
    1) The aft fuselage bulkheads
    2) The horizontal stabilizer center sections
    3) The stabilizer hinge fittings
    4) The stabilizer jackscrew-mechanism mount fittings and support structure.
  (b) Examine the horizontal stabilizer-to-body rubstrips. Look for signs of movement of the structure against the rubstrips. Such movement shows distortion of the structure.

S 212-013

(2) Examine the horizontal stabilizer external surfaces for signs of buckling. Look at the skin splices for cracks and fasteners that have pulled out or are not there.
  (a) If external damage to the horizontal stabilizer is found, do the steps that follow:
    1) Examine the spars for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.
    2) Examine the internal primary structure in the damaged area you can get to. Look for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

S 212-014

(3) Examine the elevator external surfaces for cracks, and fasteners that have pulled out or are not there.
   (a) Examine the elevator hinge bearing for signs of binding.
   (b) Examine the elevator actuator bearings for signs of binding.
   (c) If any external damage to the elevator is found, examine the front spar web. Look for distortion, cracks, paint that has flaked, and fasteners that have pulled out or are not there.

S 722-015

(4) Make sure the flight controls move freely.
   (a) If unusual conditions are found, check all of the flight control force specifications. Also check the cable tensions. If necessary, refer to the applicable Chapter 27 sections that follow:
      1) AMM 27-11-00, Ailerons
      2) AMM 27-21-00, Rudder
      3) AMM 27-31-00, Elevators
      4) AMM 27-51-00, Trailing Edge Flaps
      5) AMM 27-61-00, Spoilers and Drag Devices
      6) AMM 27-81-00, Lift Augmentation

S 212-016

(5) Examine the horizontal stabilizer rear-spar webs. Look for distortion, buckling, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.

E. Cabin Inspections (after severe or unusual turbulence)

S 212-020

(1) Do a visual inspection of all ceiling panels for dislodging and evi dence do to impact damage.

S 212-021

(2) Do a visual inspection of all ceiling overhead bins for evidence of looseness and impact damage.

S 212-037

(3) Do a detailed visual inspection of all ceiling panels equipped with video monitors.
   (a) Inspect latches, stops, potting inserts and all fasteners.

S 212-023

(4) Continue the following inspection if any cabin damage was found in the above Cabin Inspection including the ceiling panels, central overhead bins, or the video monitors. If no damage was found, no further cabin inspection is required and it is not necessary to continue this Cabin Inspection.
   (a) If ceiling panels without video monitors are found dislodged or damaged: Check for proper latching and installation. Repair as necessary.

(b) If central overhead stowage bins are found with impact damage or are loose, or if ceiling panels equipped with video monitors are found with broken latches: repair as necessary.
(c) Inspect all tie rods of affected zones for evidence of buckling or rupture. If any defect is found, replace as necessary.
(d) Examine lavatory tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.
(e) Examine the lavatory floor fittings for damage consisting of breakage, cracks, and deformation.
(f) Examine galley tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.
(g) Examine the galley floor fittings for damage consisting of breakage, cracks, and deformation.
(h) Examine closet tie rod attachments for damage consisting of breakage, cracks, and deformation. Inspect the tie rods for evidence of buckling or rupture.
(i) Examine the closet floor fittings for damage consisting of breakage, cracks, and deformation.

LANDING GEAR OPERATION ABOVE DESIGN SPEED CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. The structural examination in this subject is applicable if the landing gear is operated in flight at speeds more than the permitted maximum placard speed.

TASK 05-51-07-212-001

2. Landing Gear Operation Above Design Speed Conditional Inspection
   A. References
      (1) AMM 32-12-00/001, Main Gear Doors
      (2) AMM 32-22-00/001, Nose Gear Doors
   B. Examine Main Gear Door Areas

      S 212-002
      (1) Examine the doors, hinges, linkage and linkage support structure, and the fairing panels. Look for distortion, cracks, misalignment, displacement, and fastener hole elongation or tear-out. Also look for fasteners that have pulled out or are not there, and other evidence of distress (Ref 32-12-00).

      S 212-003
      (2) Examine the systems that are installed in the wheel wells for evidence of distress.
   C. Examine Nose Gear Door Area

      S 212-004
      (1) Examine the doors, hinges, linkage and linkage support structure, and the fairing panels. Look for distortion cracks, misalignment, displacement and fastener hole elongation or tear-out. Also look for fasteners that have pulled out or are not there, and other evidence of distress (Ref 32-22-00).

      S 212-005
      (2) Examine the systems that are installed in the wheel well for evidence of distress.

FLAP/SLAT DOWN OVERSPEED OR ABOVE 20,000 FEET CONDITION - MAINTENANCE PRACTICES

(CONDITIONAL INSPECTION)

1. General
   A. When the trailing edge flaps are lowered at speeds more than the placard speeds permit or lowered above 20,000 ft. at speeds below the placard speeds, the flap components and related structures must be examined for damage and conditions defined in this procedure.
   B. When the leading edge slats are lowered at speeds more than the flaps 1 placard for flap detents 1, 5, 15, and 20; or more than the flaps 25 placard for flap detents 25 and 30; or lowered above 20,000 ft. at speeds below the placard speeds, the slat components must be examined for damage and conditions defined in this procedure.
   C. When the leading edge slats are lowered above 20,000 ft. at speeds above the placard speeds, contact Boeing for inspection requirements.
   D. The conditional inspection is divided into two phases. They are Phase I and Phase II, and they must be done as follows:
      (1) If the overspeed was less than 15 knots, do the Phase I inspection within 100 flight hours of the overspeed indication.
         (a) If damage is found during the Phase I inspection, do the Phase II inspection before the next flight.
      (2) If the overspeed was 15 knots or more, do the Phase I and Phase II inspection before the next flight.
      (3) If the leading edge slats are lowered above 20,000 ft. at speeds below the placard, do the Phase I inspection within 100 flight hours of flaps down above 20,000 ft.
         (a) If damage is found during the Phase I inspection, do the Phase II inspection before the next flight.
   E. Before you do these inspections, do the deactivation procedure for the flaps and slats to prevent accidental movement.

TASK 05-51-08-212-001

2. Phase I Inspection
   A. References
      (1) AMM 27-51-00/201, Trailing Edge Flap System
      (2) AMM 27-81-00/201, Leading Edge Slat System
   B. Trailing Edge Flaps

S 862-002

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE TRAILING EDGE FLAP ACTUATION SYSTEM. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE FLAPS MOVE.

(1) Do the deactivation procedure for the trailing edge flap system (AMM 27-51-00/201).

S 212-003

(2) Examine the trailing edge flap components as follows:

(a) Examine the external skin of all flaps for cracks, and distortion. Also look for fasteners that have pulled out or are gone, or other signs of damage.

(b) Examine the flaps adjacent to the support structure for openings, distortions, or split sealant.

NOTE: Corrosion of the internal structure can be caused by splits in the sealant beads.

S 212-016

WARNING: DO NOT LET OBJECTS GET IN THE HOUSING ASSEMBLY OF THE SLAT TRACK. THIS WILL HELP PREVENT A PUNCTURE OF THE HOUSING ASSEMBLY THAT COULD CAUSE A FUEL LEAK. THE FUEL LEAK COULD CAUSE A FIRE AND POSSIBLE DEATH OR INJURY TO PERSONNEL.

(3) Examine the area to make sure objects are not left in the slat track housing assembly.

C. Leading Edge Slats

S 862-006

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE LEADING EDGE SLAT ACTUATION SYSTEM. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE SLATS MOVE.

(1) Do the deactivation procedure for the leading edge slat system (AMM 27-81-00/201).

S 212-005

(2) Examine the leading edge slat components as follows:

(a) Examine all of the slat skins for distortion. Also look for fasteners that have pulled out or are gone, and other signs of damage.

(b) Examine the slats adjacent to main track and auxilliary arm attachments for openings, distortion, or split sealant.

NOTE: Corrosion of the internal structure can be caused by splits in the sealant beads.

S 212-017

WARNING: DO NOT LET OBJECTS GET IN THE HOUSING OF THE SLAT TRACK. THIS WILL HELP PREVENT A PUNCTURE OF THE HOUSING ASSEMBLY THAT COULD CAUSE A FUEL LEAK. THE FUEL LEAK COULD CAUSE A FIRE AND POSSIBLE DEATH OR INJURY TO PERSONNEL.

(3) Examine the area to make sure objects are not left in the slat track housing assembly.

TASK 05-51-08-212-007

3. Phase II Inspection

A. References

(1) AMM 27-51-00/201, Trailing Edge Flap System
(2) AMM 27-51-02/401, Trailing Edge Flap Fuse Pins
(3) AMM 27-81-00/201, Leading Edge Slat System

B. Trailing Edge Flaps

S 862-008

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE TRAILING EDGE FLAP ACTUATION SYSTEM. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE FLAPS MOVE.

(1) Do the deactivation procedure for the trailing edge flap system (AMM 27-51-00/201).

S 212-009

(2) Examine the components of the trailing edge flaps and the support structure as follows:
(a) Examine the flap linkages for distortion and cracked paint.
(b) Examine the actuator support structure at the rear spar and trailing edge ribs.
(c) Examine the actuator and drive mechanism for signs of cracks or distortions.
(d) Remove all fuse pins at the flap support linkage and examine them for signs of cracks or distortion (AMM 27-51-02/401).

S 212-018

WARNING: DO NOT LET OBJECTS GET IN THE HOUSING ASSEMBLY OF THE SLAT TRACK. THIS WILL HELP PREVENT A PUNCTURE OF THE HOUSING ASSEMBLY THAT COULD CAUSE A FUEL LEAK. THE FUEL LEAK COULD CAUSE A FIRE AND POSSIBLE DEATH OR INJURY TO PERSONNEL.

(3) Examine the area to make sure objects are not left in the slat track housing assembly.

C. Leading Edge Slats

S 862-004

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE LEADING EDGE SLAT ACTUATION SYSTEM. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE SLATS MOVE.

(1) Do the deactivation procedure for the leading edge slat system (AMM 27-81-00/201).

S 212-010

(2) Examine all slat main tracks, auxiliary tracks and arms, and all drive mechanisms. Look for cracks, cracked paint, distortion, and fasteners that have pulled out or are gone.

S 212-019

WARNING: DO NOT LET OBJECTS GET IN THE HOUSING ASSEMBLY OF THE SLAT TRACK. THIS WILL HELP PREVENT A PUNCTURE OF THE HOUSING ASSEMBLY THAT COULD CAUSE A FUEL LEAK. THE FUEL LEAK COULD CAUSE A FIRE AND POSSIBLE DEATH OR INJURY TO PERSONNEL.

(3) Examine the area to make sure objects are not left in the slat track housing assembly.

D. Wing Leading Edge

S 212-020

WARNING: DO NOT LET OBJECTS GET IN THE HOUSING ASSEMBLY OF THE SLAT TRACK. THIS WILL HELP PREVENT A PUNCTURE OF THE HOUSING ASSEMBLY THAT COULD CAUSE A FUEL LEAK. THE FUEL LEAK COULD CAUSE A FIRE AND POSSIBLE DEATH OR INJURY TO PERSONNEL.

(1) Remove the lower panels of the leading edge and examine the slat mechanisms and support structure for signs of damage.

S 212-012

(2) Remove all main track and auxiliary arm roller and structural support bolts. Visually examine the bolts to make sure the bolts are not cracked, bent, or show other signs of damage.

(a) The bolts to be inspected are shown in the following references:

1) AMM 27-81-32/401

2) AMM 27-81-34/401

E. Put the Airplane Back To Its Initial Condition

S 942-013

(1) Put the airplane back to its initial condition after all necessary Flap/Slat Down Overspeed or Above 20,000 Feet conditional inspections are completed.

OVERWEIGHT TAXI CONDITION (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

1. General
   A. Overweight Taxi is defined as taxiing at a weight that is more than the maximum-taxi weight (MTW) as specified in the Airplane Flight Manual (AFM).
      (1) Before flight, you must decrease the airplane weight to that specified by the Airplane Flight Manual for takeoff.
   B. Inspection Criteria; An immediate structural inspection is necessary if you:
      (1) Taxi the airplane by more than 1/2% of the maximum-taxi-weight (MTW).
      (2) Taxi the airplane overweight at any weight over the Maximum Taxi Weight (MTW) and have any of these conditions:
         (a) High speed ground turn
         (b) Sharp radius turn
         (c) Heavy braking
         (d) Taxi over rough pavement
         (e) Pivoting (sharp radius turning with brakes on)
      (3) If the criteria for the above paragraphs have not been met, no inspection is necessary.
         (a) But, you must decrease the airplane weight to that specified by the Airplane Flight Manual before takeoff.
   C. The Inspections
      (1) The inspection is divided into Phase I and Phase II.
      (2) If the inspection for Phase I shows no signs of damage, the inspection is complete.
      (3) If the Phase I inspection shows any sign of damage, the Phase II inspection must be done.
   D. Inspections, Repairs, and Replacements
      (1) When this procedure tells you to "examine" a part, look for these conditions:

         - cracks
         - structure that pulled apart
         - loose paint (paint flakes)
         - twisted parts (distortion)
         - bent parts
         - wrinkles or buckles in structure
         - fastener holes that became larger or longer
         - loose fasteners
         - missing fasteners (fasteners that have pulled out or are gone)
         - delaminations (a component with one or more layers pulled apart)
         - parts that are not aligned correctly
         - interference (clearance that is not sufficient between two parts)
         - discoloration (heat damage)
         - nicks or gouges
         - other signs of damage

(2) Replace or repair the components that have one or more of the conditions given above.

TASK 05-51-09-212-016

2. Phase I Inspection

A. Airplane Inspection

S 212-017

(1) Do the inspection of the main and nose landing gear.

(a) Examine all tires and wheels.

(b) Examine the support structure.

(c) Look for signs of fluid leakage at the top and bottom of the outer cylinder of the shock strut.

NOTE: A small quantity of hydraulic fluid on the surface of the inner cylinder of the shock strut is satisfactory.

(d) Examine the main landing gear truck beams.

S 212-018

(2) Do the inspection of the landing gear, fuselage, and wing.

(a) Look for fuel leaks, and other fluid leaks, in the areas that follow:

1) All wheel well areas of the body, wing, and nose landing gear

2) The lower external surface of the fuselage in the area of the wing-to-body fairing

3) The wing.

TASK 05-51-09-212-019

3. Phase II Inspection

A. References

(1) AMM 07-11-01/201, Jacking Airplane

(2) AMM 12-15-01/301, Main Gear Shock Strut

(3) AMM 12-15-02/301, Nose Gear Shock Strut

(4) AMM 32-11-02/401, Main Gear Shock Strut
(5) AMM 32-21-25/201, Nose Gear Shock Strut Seals
(6) AMM 32-32-00/501, Main Landing Gear Extension and Retraction
(7) AMM 32-34-00/501, Nose Landing Gear Extension and Retraction
(8) AMM 32-51-00/501, Nose Wheel Steering System

B. Airplane Inspection

S 212-020

(1) Do the inspection of the main landing gear and support structure.
    (a) Make sure the shock strut pressures are normal and the hydraulic fluids are at the correct levels (AMM 12-15-01/301).
    (b) Lift the airplane with jacks (AMM 07-11-01/201).
    (c) Examine the inner and outer cylinder lugs.
    (d) Examine all structural components of the main landing gear and carefully examine the components that follow:
        1) Shock strut
        2) Trunnion
        3) Drag strut
        4) Torsion links
        5) Truck beam
        6) Side strut
        7) Downlocks
        8) Truck Position Actuator (the actuator that sets the angle of the truck beam for retraction and extension)
        9) Strut doors and the mechanism that retracts and extends the doors
        10) Brake rods
        11) Tow fitting
        12) Axles
    (e) Examine the support structure of the main landing gear and carefully examine the components that follow:
        1) Landing gear beam
        2) Support fittings for the landing gear beam
           - Inboard
           - Outboard

3) Trunnion support fittings and attachments
- Forward
- Aft

4) Stabilizer links and fittings between the rear spar and landing gear beam
- Inboard
- Outboard

(f) Examine all of the pin joints, spindles, and fuse pin connections.
(g) If you found tire damage in Phase I, do the steps that follow.
1) Remove and examine the wheel structure.
2) Remove and examine the brake assembly.
(h) If one or more of the conditions that follow occurred; remove, disassemble, and examine all parts of the shock strut (AMM 32-11-02/401).
1) The shock strut pressures were sufficiently low to cause damage.
2) The hydraulic fluid levels were sufficiently low to cause damage.
3) You found damage to one or more of the parts during your inspection of the landing gear.
(i) Make sure the main landing gear retracts and extends correctly (AMM 32-32-00/501).
(j) Lower the airplane from the jacks (AMM 07-11-01/201).

S 212-021
(2) Do the inspection of the nose landing gear and support structure.
(a) Make sure the shock strut pressures are normal and the hydraulic fluids are at the correct levels (AMM 12-15-02/301).
(b) Lift the nose of the airplane with jacks (AMM 07-11-01/201).
(c) If you found tire damage in Phase I, remove and examine the wheel structure.
(d) Examine all structural components of the nose landing gear and carefully examine the components that follow:
1) Shock strut (AMM 32-21-25/201)
2) Torsion links
3) Drag strut
4) Lock links
5) Tow fitting
6) Steering mechanism
7) Axle
(e) Examine the wheel well area and carefully examine the parts that follow:
1) Wet (the left and right sidewalls)

2) Aft bulkhead
3) Trunnion attachments
4) Drag strut attachments

(f) If one or more of the conditions that follow occurred; remove, disassemble, and examine all parts of the shock strut (AMM 32-21-01/601).
1) The shock strut pressures were sufficiently low to cause damage.
2) The hydraulic fluid levels were sufficiently low to cause damage.
3) You found damage to one or more of the parts during your inspection of the landing gear.

(g) Make sure the steering system is adjusted and operates correctly (AMM 32-51-00/501).

(h) Make sure the nose landing gear retracts and extends correctly (AMM 32-34-00/501).

(i) Lower the nose of the airplane from the jacks (AMM 07-11-01/201).

S 212-022

(3) Do the inspection of the fuselage.

NOTE: If you find external damage to the fuselage, always examine the adjacent internal structure.

(a) Examine the lower fuselage structure.
1) Examine carefully the area below the fuselage floor beams, immediately aft of the wing center section.
2) Also examine carefully the top of the fuselage in the areas near the wing front and rear spar.

(b) Examine the skin panels on the lower side of the aft fuselage. (Examine carefully between Body Stations 1370 and 1470, below stringer 20.)

NOTE: Buckles or wrinkles between fasteners are indications of damage.

(c) Examine the wing-to-fuselage joints, and wheel well bulkheads and sidewalls.

(d) Examine the fuselage skin joints above the landing gear beam.

(e) Examine the nose wheel well aft bulkhead to fuselage skin attachments.

C. Put the Airplane Back to its Usual Condition

S 432-023

(1) Install the components you removed or install replacement components.

DRAGGED ENGINE NACELLE/ENGINE SEIZURE/ENGINE AND STRUT DAMAGE CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This section gives an examination procedure for the engine and strut after a dragged engine nacelle condition. It also includes examination after an engine seizure and other types of engine and strut damage.
   B. Types of engine damage refers to conditions that cause abnormal engine vibration. These vibrations can be caused by loss of fan blades or other parts of the engine or cowling.
   C. Types of strut damage refers to conditions that cause damage to the strut or cowling. The type of damage, such as dents or wrinkles is caused when they are hit by ground support equipment.

      NOTE: These inspections are not necessary when the operator finds that small scratches/dents etc., were not caused by the conditions in this section.

TASK 05-51-10-212-014

2. DRAGGED ENGINE NACELLE/ENGINE SEIZURE/ENGINE AND STRUT DAMAGE CONDITION - GENERAL MAINTENANCE PRACTICES

   A. References
      (1) AMM 54-51-01/601, Nacelle Strut
      (2) AMM 54-52-01/601, Nacelle Strut Fairing
      (3) AMM 71-00-00/601, Power Plant
   B. Inspection guidelines

      S 212-015
      (1) When the conditional inspection tells you to "examine" a component or area, look for these conditions (replace or repair components, if necessary):
         (a) Cracks
         (b) Creases or cracks in the skin or web
         (c) Skin wrinkling that crosses a line of fasteners
         (d) Pulled apart structure
         (e) Loose paint (paint flakes)
         (f) Twisted parts (distortion)
         (g) Bent components
         (h) Loose fasteners
         (i) Fasteners that have pulled out or are gone
         (j) Delaminations
         (k) Misalignment
         (l) Interference
         (m) Other signs of damage.

S 212-016

(2) When the conditional inspection tells you to "examine" a fuse pin, use one of the following inspection methods:

(a) Fuse pin inner diameter distortion inspection, method number 1.

1) Access the fuse pin that is to be inspected.

a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).

2) Remove the bolt that goes through the fuse pin and the end caps of the fuse pin that is going to be inspected.

3) Clean the grease away from the inner diameter of the fuse pin.

4) Use a straight edge or an equivalent device and look for distortion of the inner diameter of the fuse pin.

a) If you find damage in the diagonal brace fuse pin (aft pin), do the same inspection for the upper link fuse pin.

(b) Fuse pin joint rotation inspection, method number 2.

1) Remove the load from the joint that has the fuse pin to be inspected.

2) Access the fuse pin that is to be inspected.

a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).

3) Rotate the fuse pin. If the fuse pin is free to rotate, no damage exists.

(c) Fuse pin partial removal and binding inspection, method number 3.

1) Remove the load from the joint that has the fuse pin to be inspected.

2) Access the fuse pin that is to be inspected.

a) Remove all strut panels and doors, and open the nacelle cowlings (AMM 54-52-01/601).

3) Pull the fuse pin out 0.5 inches (12.7 mm). If the fuse pin is free to slide in and out of the lugs, no damage exists.

C. Examine Struts and Nacelles

S 212-004

(1) Examine the areas that follow for buckling, cracks, and fasteners that have pulled out or are not there. Also look for unusual external conditions (AMM 54-52-01/601).

(a) Strut panels

(b) Strut doors
(c) Lower surface of the nacelle cowlings.

D. Fuselage and Wing Inspection

S 212-013

(1) Examine the fuselage and wing areas.
(a) Examine the Nacelles and Nacelle-Struts components that follow:

NOTE: Do a general visual inspection for obvious damage.

1) The strut to wing fairing
2) The pylon panels
3) The pylon doors
4) The strut skins (cut outs around edges; inner and outer surfaces).
5) The nacelle cowlings.

(b) Open the trailing edge fairing door and remove the strut access panels (AMM 06-41-00/201).
(c) Remove the gap cover above the upper link.
(d) Remove the trailing edge fixed fairing (inboard struts).
(e) Examine the internal strut areas that follow:

NOTE: Examine the bulkhead area of the AFT engine mount carefully.

NOTE: Examine the strut midspar carefully.

1) Bulkhead skins.
2) Bulkhead chords.

(f) Examine the areas of the struts that follow for damage:
1) If the replacement of engine cowls, tailcone, or thrust reverser sleeves is necessary after an impact damage condition/incident, continue to do the following procedure. If the engine cowls, tailcone, or thrust reverser sleeves did not require replacement after an impact damage condition/incident it is not necessary to do the following procedure. However, any damage exceeding the Structural Repair Manual (SRM) chapter 54 damage limits requires the completion of this procedure.
a) Midspar attachment area:
- strut midspar fitting
- spring beams
- under wing fittings
- fuse pins
- lugs
- side brace
- side brace fittings
- attachment hardware
- all other structure in this area.
- engine mounts and adjacent structure.

b) Diagonal brace area:
- diagonal brace assembly
- strut attach fitting
- wing attach fitting
- lugs
- bushings
- fuse pins/bolts (aft pin only)
- all other structure in this area.

c) Upper link area:
- upper link assembly
- strut attach fitting
- wing attach fitting
- bushings
- lugs
- fuse pins/bolt (forward pin only)
- wing leading edge beam located above each engine strut.
- strut to wing fairing
- all other structure in this area.

2) Examine all engine mounts and adjacent structure.
3) If you think there is possible engine damage or seizure, remove the engine, if it is necessary.

BRAKE TEMP LIGHT/HIGH ENERGY STOP CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. Brake temperature indications of 4 and below or no "BRAKE TEMP" light indication is considered normal. No maintenance action is required.
   B. This procedure has the following tasks:
      (1) High Energy Stop Inspection.
      (2) Inspection Procedures.
         (a) Conditional Inspection - In CAUTION Range, fuse plug melt range, and/or overheat brake light.
         (b) Conditional Inspection - Fuses Melted.
      (3) Heat Damage Inspection.
   C. This first section gives procedures to be followed after a high energy stop condition, or conditions where the "BRAKE TEMP" light comes on (if a "BRAKE TEMP" light is installed). Do an inspection of the tires, wheels and brakes. If fuse plugs are melted, a longer inspection is necessary.

      NOTE: If available, Boeing drawing 160T0001 shows wheel, tire, and brake interchangeability.

   D. The airplane brakes slowly send heat to the wheels, tires, axle, and the air around them. The wheels have fuse plugs which, at specified temperatures, melt and release the tire pressure. This is to stop tire and wheel damage when the temperature gets too high.
   E. The quantity of energy absorbed by the brakes is the primary cause for the fuse plugs to melt. The "Brake Cooling Schedule Chart" (Fig. 201) can be used to find the quantity of energy absorbed by each brake. The chart will only give an estimate of the energy absorbed during the stop. The items that follow will also have an effect on the energy absorbed, and if the fuse plugs will melt:
      (1) Remaining energy from the previous stop
      (2) The runway slope
      (3) The wind conditions
      (4) Use of the thrust reverser
      (5) Braking Technique
   F. Fuse plug melt can be caused by a rejected takeoff. Also, each stop or sequence of stops that collects sufficient energy to be in the CAUTION range (Fig. 201) can cause the fuse plugs to melt. Each brake can possibly have a different energy level after a stop. If a "Brake Temperature Monitoring System" is installed (AMM 32-46-00) then the "BRAKE TEMP" light shows if it is possible that the fuse plugs will melt.
   G. If installed, the "Brake Temperature Monitoring System" is an alternative way to use Figure 201 to find the energy in the brakes. The brake temperature shown is only an estimate. It is possible that the fuse plug(s) will melt if there is an indication of 5 or higher on the EICAS display. It is very possible that the fuse plug(s) will melt if there is an indication of 7 or higher on the EICAS display.

H. To show the correct function of Figure 201 a calculated example of energy absorbed by a brake is as follows:

I. 767-200;
Refer to the data that follows:
(1) Gross Weight - 253,000 pounds (115,000 kg)
(2) Brakes on Speed - 122 knots (no wind)
(3) Landing - Max Manual Braking
(4) Pressure Altitude - 2000 ft
(5) Outside Air Temperature - 86°F (30°C)
(6) No Reversers
(7) Brake Energy Per Brake - 21.0 million foot-pounds
(8) Ground Cooling Time - 25 Minutes

J. 767-300;
Refer to the data that follows:
(1) Gross Weight - 290,000 pounds (132,000 kg)
(2) Brakes on Speed - 100 knots (no wind)
(3) Normal Landing Stop
(4) Pressure Altitude - 4000 ft
(5) Outside Air Temperature - 86°F (30°C)
(6) No Reversers
(7) Resultant Brake Energy - 18.6 million foot-pounds
(8) Ground Cooling Time - 20 minutes

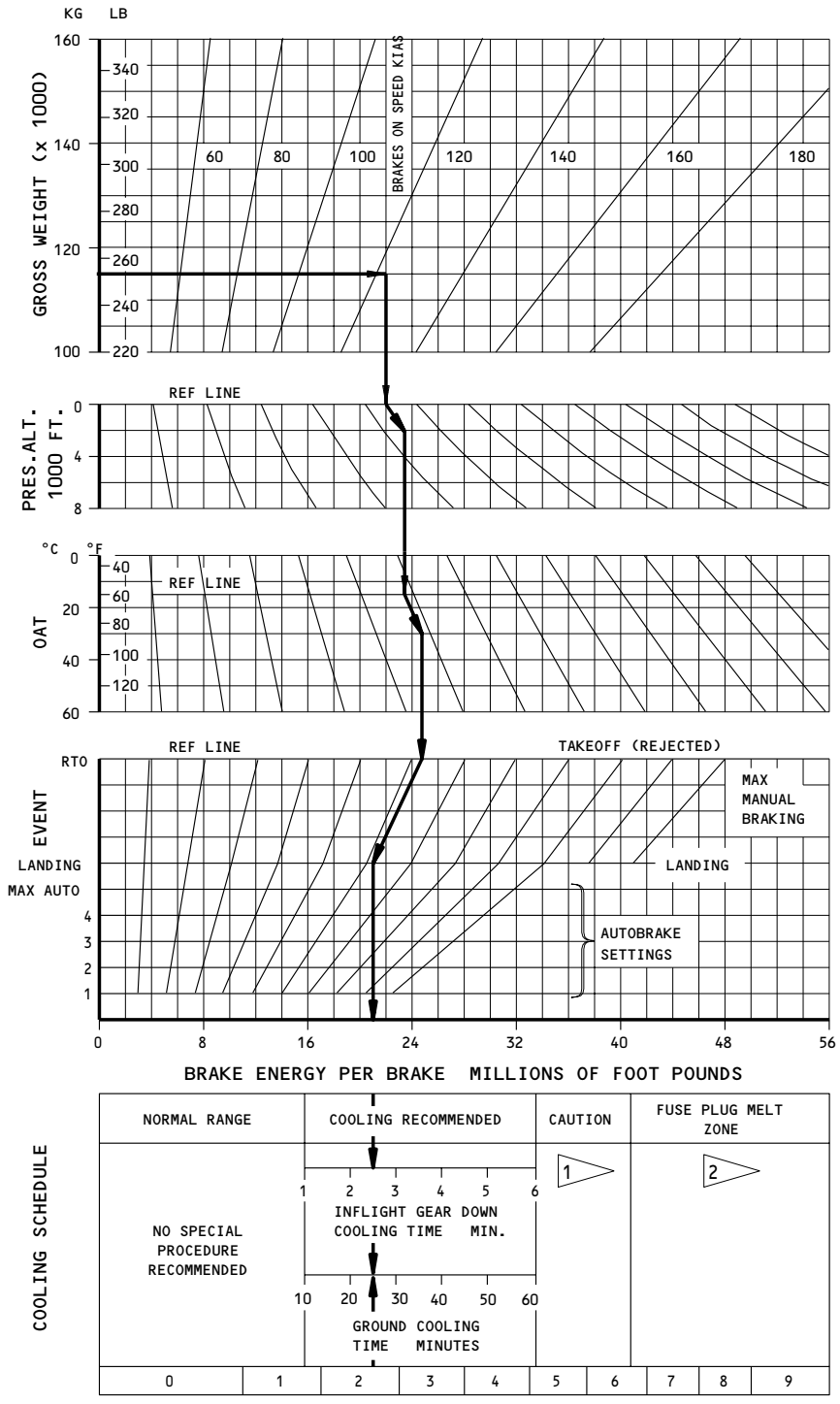
TASK 05-51-14-212-089

2. High Energy Stop Inspection

WARNING: DO NOT GO NEAR THE MAIN LANDING GEAR FOR 1 HOUR AFTER AIRPLANE HAS MADE A HIGH ENERGY STOP. INJURY TO PERSONS CAN OCCUR.

A. If you know that a high energy stop occurred (for example, a high energy rejected takeoff or a normal landing and the brake overheat light comes on), do the subsequent steps:

S 582-090
(1) Move the airplane away from the runway in use immediately because the tires will possibly deflate.
(a) Do not set the parking brake.



GUIDANCE INFORMATION ONLY

OBSERVE MAXIMUM QUICK TURN-AROUND LIMITATION

TO CORRECT FOR WIND ENTER CHART WITH BRAKES ON SPEED MINUS ONE-HALF THE HEADING OR PLUS 1.5 TIMES THE TAILWIND.

CHART DOES NOT CONSIDER BENEFIT OF REVERSE THRUST.

CHART SHOWS ENERGY PER BRAKE ADDED BY A SINGLE STOP WITH ALL BRAKES OPERATING. ENERGY IS ASSUMED TO BE EQUALLY DISTRIBUTED AMONG THE OPERATING BRAKES. TOTAL ENERGY IS SUM OF RESIDUAL ENERGY PLUS ENERGY ADDED.

ADD 1.0 MILLION FOOT POUNDS PER BRAKE FOR EACH TAXI MILE.

FOR ONE BRAKE DEACTIVATED INCREASE ENERGY PER BRAKE BY 15 PERCENT.

IF GROUND SPEED IS USED FOR BRAKES ON SPEED, IGNORE WIND, ALTITUDE AND OAT EFFECTS.

1

WHEEL FUSE PLUGS MAY MELT. DELAY TAKEOFF, AND INSPECT AFTER ONE HOUR. IF OVERHEAT OCCURS AFTER TAKEOFF, EXTEND GEAR SOON FOR AT LEAST 6 MINUTES.

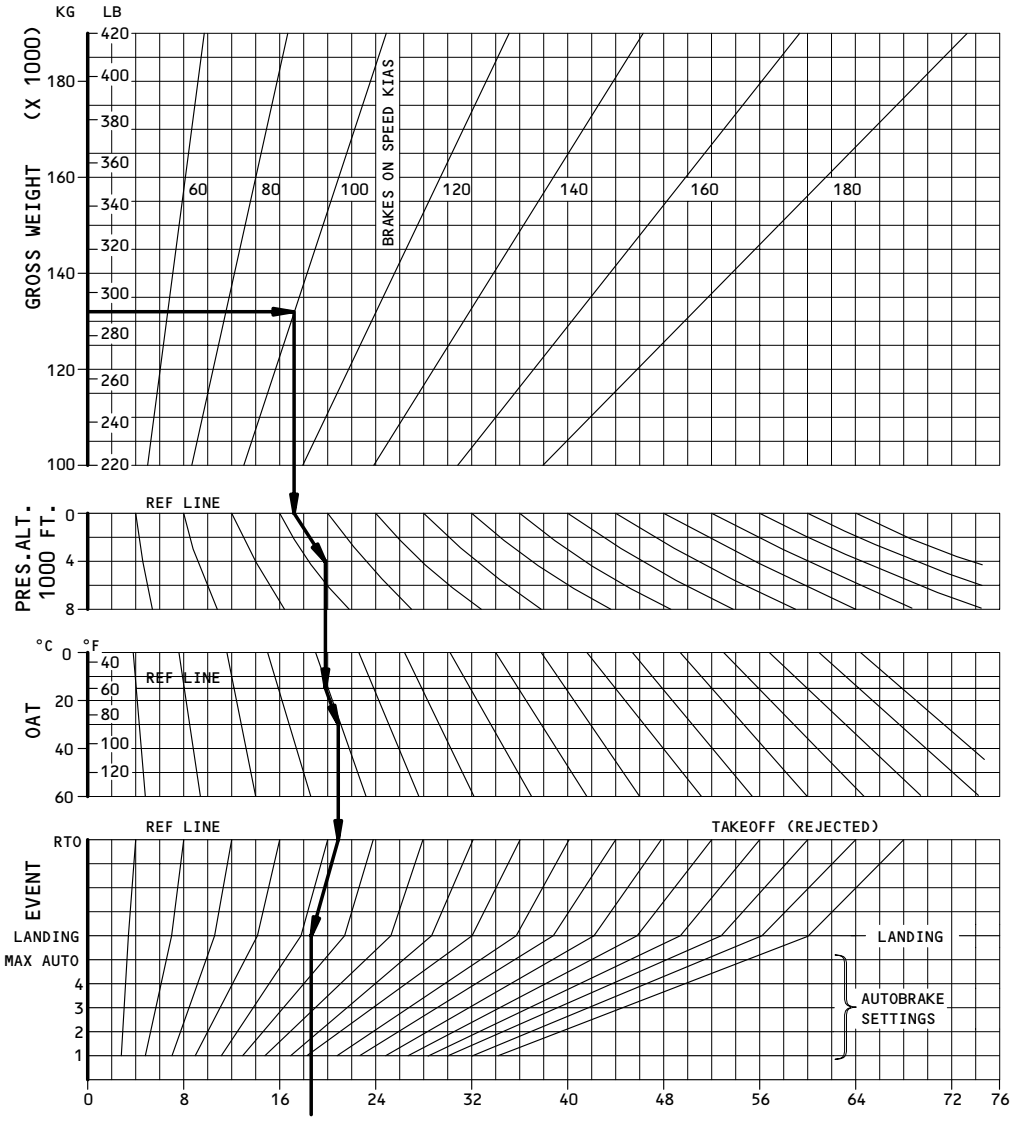
2

CLEAR RUNWAY IMMEDIATELY. UNLESS REQUIRED, DO NOT SET PARKING BRAKE. DO NOT APPROACH GEAR OR ATTEMPT TAXI FOR ONE HOUR. TIRE, WHEEL, AND BRAKE REPLACEMENT MAY BE REQUIRED. IF OVERHEAT OCCURS AFTER TAKEOFF, EXTEND GEAR SOON FOR AT LEAST 10 MINUTES.

NOTE: BRAKE TEMPERATURE MONITOR INDICATION ON EICAS MAY BE USED 10 TO 15 MINUTES AFTER AIRPLANE HAS COME TO A COMPLETE STOP, OR INFLIGHT WITH GEAR RETRACTED, TO DETERMINE RECOMMENDED COOLING SCHEDULE.

Brake Energy
Figure 201 (Sheet 1)

314290



GUIDANCE INFORMATION ONLY

OBSERVE MAXIMUM QUICK TURN-AROUND LIMITATION

NOTE:
TO CORRECT FOR WIND ENTER CHART WITH BRAKES ON SPEED MINUS ONE-HALF THE HEADING OR PLUS 1.5 TIMES THE TAILWIND.

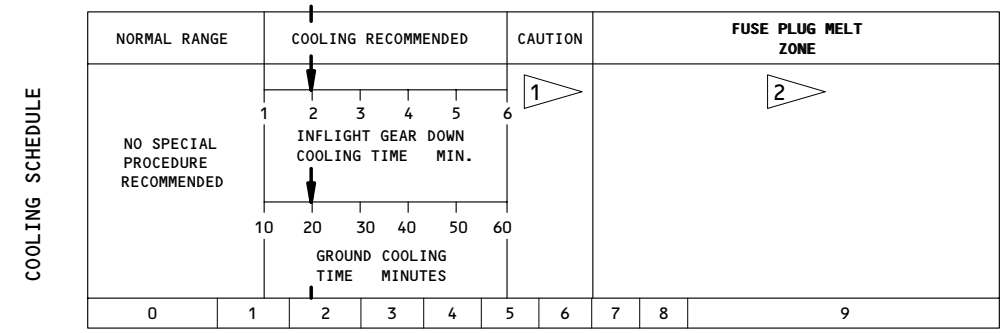
CHART DOES NOT CONSIDER BENEFIT OF REVERSE THRUST

CHART SHOWS ENERGY PER BRAKE ADDED BY A SINGLE STOP WITH ALL BRAKES OPERATING.
ENERGY IS ASSUMED TO BE EQUALLY DISTRIBUTED AMONG THE OPERATING BRAKES. TOTAL ENERGY IS SUM OF RESIDUAL ENERGY PLUS ENERGY ADDED.

ADD 1.0 MILLION FOOT POUNDS PER BRAKE FOR EACH TAXI MILE.

FOR ONE BRAKE DEACTIVATED INCREASE ENERGY PER BRAKE BY 15 PERCENT.

IF GROUND SPEED IS USED FOR BRAKES ON SPEED, IGNORE WIND, ALTITUDE AND OAT EFFECTS.

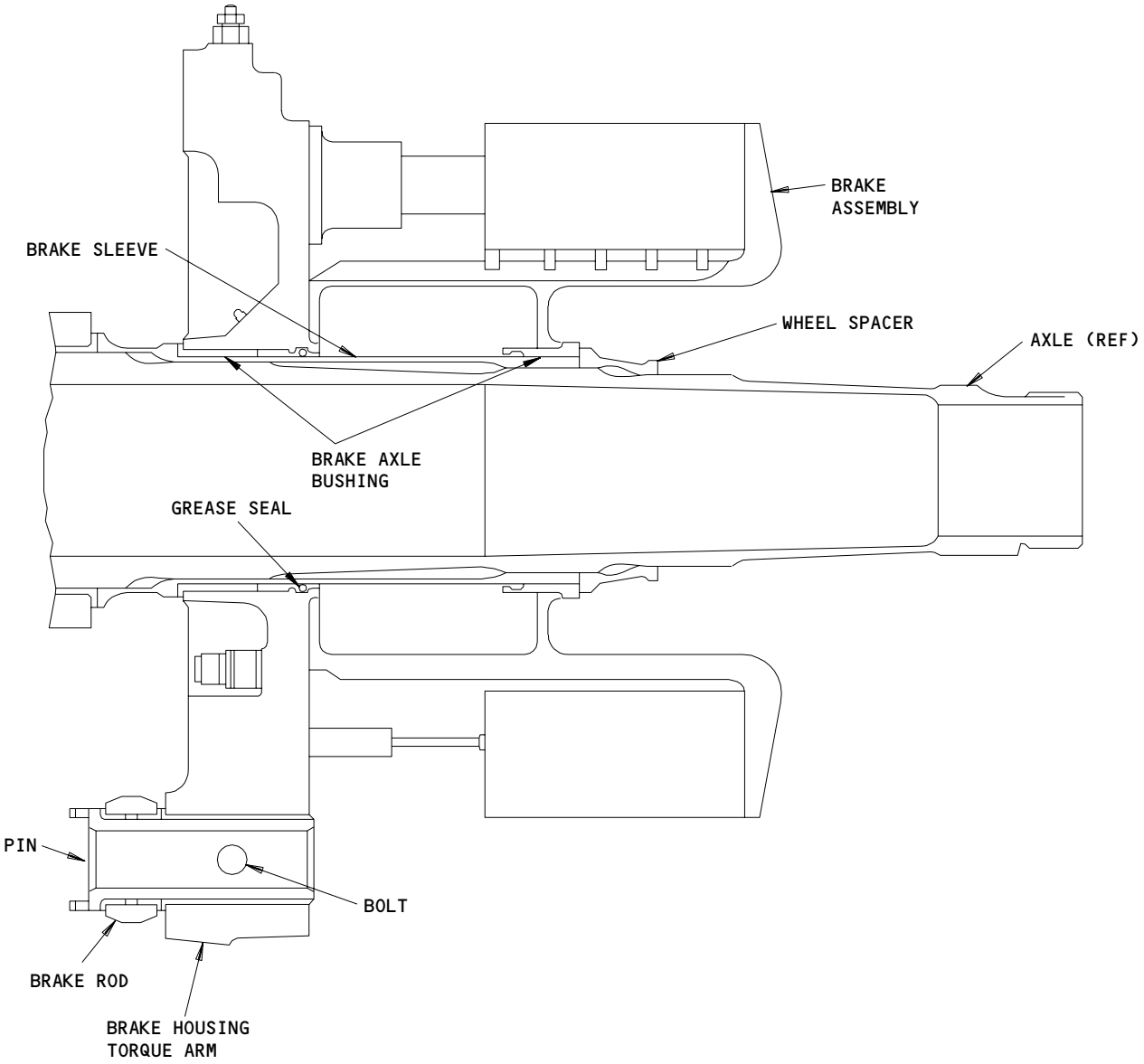


1
WHEEL FUSE PLUGS MAY MELT. DELAY TAKEOFF, AND INSPECT AFTER ONE HOUR. IF OVERHEAT OCCURS AFTER TAKEOFF, EXTEND GEAR SOON FOR AT LEAST 8 MINUTES.

2
CLEAR RUNWAY IMMEDIATELY. UNLESS REQUIRED, DO NOT SET PARKING BRAKE. DO NOT APPROACH GEAR OR ATTEMPT TAXI FOR ONE HOUR. TIRE, WHEEL, AND BRAKE REPLACEMENT MAY BE REQUIRED. IF OVERHEAT OCCURS AFTER TAKEOFF, EXTEND GEAR SOON FOR AT LEAST 12 MINUTES.

NOTE: BRAKE TEMPERATURE MONITOR INDICATION ON EICAS MAY BE USED 10 TO 15 MINUTES AFTER AIRPLANE HAS COME TO A COMPLETE STOP, OR INFLIGHT WITH GEAR RETRACTED, TO DETERMINE RECOMENDED COOLING SCHEDULE.

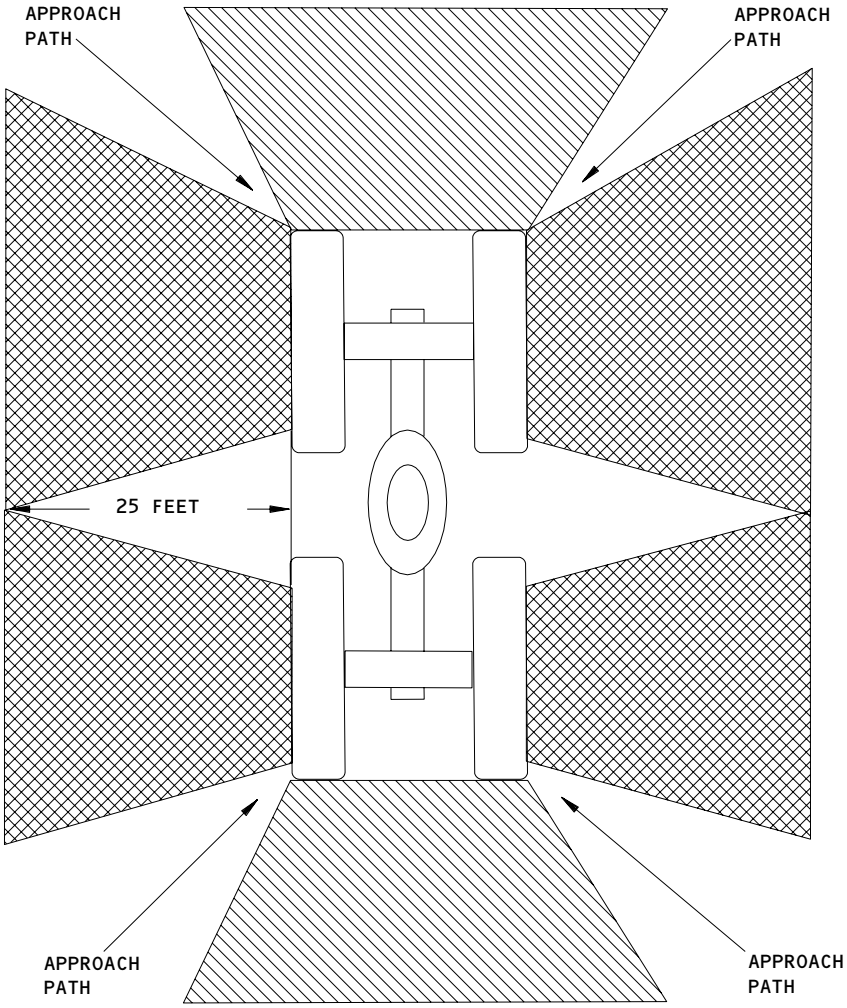
Brake Energy
Figure 201 (Sheet 2)



VIEW WITH THE WHEEL REMOVED

Main Landing Gear Brake/Axle Example
Figure 202

G15496



TIRE HAZARD AREA
RIM HAZARD AREA

NOTE: DO NOT APPROACH MLG FOR INSPECTION OR INSTALLATION OF GEAR PINS UNTIL CLEARED.

Hot Brake And Tire Danger Areas
Figure 203

(b) Do not let the airplane move. Do one of these steps:
1) Keep the tow tug connected to the airplane.
2) Put the chocks on the nose landing gear tires.

WARNING: DO NOT GO NEAR THE MAIN LANDING GEAR FOR 1 HOUR AFTER THE AIRPLANE HAS MADE A HIGH ENERGY STOP. INJURY TO PERSONS CAN OCCUR.

(c) Tell the fire department persons that the types of fires that follow could occur:
1) Hydraulic fluid fires
2) Grease fires
3) Tire fires.

WARNING: DO NOT APPLY EXTINGUISHER OR COOLANT DIRECTLY ON THE INFLATED TIRE OR WHEEL. AN EXPLOSION CAN BE CAUSED AND INJURY TO PERSONS CAN OCCUR.

WARNING: THE BRAKES, WHEELS AND TIRES CAN BE VERY HOT. IT MAY BE NECESSARY TO WAIT 2 TO 3 HOURS BEFORE THE TEMPERATURE DECREASES TO A LEVEL THAT THEY CAN BE TOUCHED. INJURY TO PERSONS CAN OCCUR.

(d) After 1 hour, use water mist or fog on the wheel or tire to decrease the temperature. Or, wait 2 to 3 hours for the brakes, wheels and tires to cool so that they can be touched. If a chemical agent is used to extinguish a brake-area fire, thoroughly rinse extinguishing agent from the brakes and surrounding components once they have cooled. Use large amount of low-pressure, clean water to rinse.

NOTE: A different source of cooling can be an air conditioning cart or truck.

S 862-091

(2) A waiting period and a fuse plug inspection can be necessary by the "Maximum Quick Turnaround Weight" (MQTW) chart in the "Airplane Flight Manual" (AFM) before the airplane can be dispatched.

S 212-092

(3) If the brake energy level is below the CAUTION range in Figure 201 ("BRAKE TEMP" light does not come on) then no other inspections are recommended.

S 212-093

(4) When the brake energy level is in the CAUTION range or above ("BRAKE TEMP" light comes on), do not go near the gear for 1 hour. After 1 hour check for melted fuse plugs. Wait 1 hour to make sure that the maximum fuse plug temperatures occurred and started to decrease.

NOTE: Wait 1 hour. The "BRAKE TEMP" light (if installed) will go off before the fuse plugs get to their maximum temperature.

(a) After 1 hour, do the "Conditional Inspection - In CAUTION Range, fuse plug melt range, and/or overheat brake light".
(b) If fuses melted, do the "Conditional Inspection - Fuses Melted" to look for heat damage.

TASK 05-51-14-212-094

3. Inspection Procedures

A. Equipment

WARNING: THE POWER CABLE OF THE BORESCOPE MUST BE IN GOOD CONDITION. IF THERE ARE ANY CIRCUMFERENTIAL CUTS, FRAYED AREAS, OR RUPTURES TO THE EXTERNAL RUBBER COVER OF THE CABLE, INJURY TO PERSONS CAN OCCUR.

(1) Borescope - "Commercially Available"
(Alternative)
(2) Borescope - Fiber Optic Light Supply - Model BLS-97
(Alternative)
American Cystoscope Makers Inc.,
Industrial Division
Pelham, New York
(3) Borescope - Fiber Optic Light Supply - Model BLS-98
(Alternative)
American Cystoscope Makers Inc.,
Industrial Division
Pelham, New York
(4) Rigid Borescope - Model BF0-3920A
(Alternative)
American Cystoscope Makers Inc.,
Industrial Division
Pelham, New York
(5) Flexible Borescope - Model BF1F-127DD
(Alternative)
American Cystoscope Makers Inc.,
Industrial Division
Pelham, New York

(6) FiberLight Carrier - Model FO-400-5A
(Alternative)
American Cystoscope Makers Inc.,
Industrial Division
Pelham, New York
(7) Rigid Borescope - Model FIB 730
(Alternative)
Richard Wolf Medical Instruments Corp.,
Rosemont, Illinois
(8) Rigid Borescope - Model FIB 740
(Alternative)
Richard Wolf Medical Instruments Corp.,
Rosemont, Illinois
(9) Rigid Borescope - Model 760
(Alternative)
Richard Wolf Medical Instruments Corp.,
Rosemont, Illinois

B. References
(1) AMM 32-41-08/401, Main Gear Wheel Brake
(2) AMM 32-41-08/601, Main Gear Wheel Brake
(3) AMM 32-42-06/401, Antiskid Transducer
(4) AMM 32-45-01/401, Main Gear Wheel and Tire
(5) AMM 32-45-04/601, Tires
(6) AMM 32-45-03/601, Wheels

C. Conditional Inspection - In CAUTION Range, fuse plug melt range, and/or overheat brake light

S 882-106

WARNING: DO NOT APPLY EXTINGUISHER OR COOLANT DIRECTLY ON THE INFLATED TIRE OR WHEEL. AN EXPLOSION CAN BE CAUSED AND INJURY TO PERSONS CAN OCCUR.

WARNING: THE BRAKES, WHEELS AND TIRES CAN BE VERY HOT. IT MAY BE NECESSARY TO WAIT 2 TO 3 HOURS BEFORE THE TEMPERATURE DECREASES TO A LEVEL THAT THEY CAN BE TOUCHED. INJURY TO PERSONS CAN OCCUR.

(1) Let the brakes, tires, and wheels cool, see figure 201.

S 212-107
(2) Examine the tires (AMM 32-45-04/601). The fuse plugs melted if one or more tires deflated. For this condition, do the "Conditional Inspection - Fuses Melted".

S 212-108
(3) Examine the wheels (AMM 32-45-03/601).

S 212-109

(4) Examine the brakes (AMM 32-41-08/601).

(a) Apply the brakes fully five or six times. Monitor the brake operation and look for hydraulic leaks during the last time the brakes were applied.

NOTE: Make sure the brakes work. Look at the movement of the brake indicator wear pins.

S 212-123

(5) Examine the main landing gear side brace downlock sensor (AMM 32-61-02/201).

D. Conditional Inspection - Fuses Melted

S 882-110

WARNING: DO NOT APPLY EXTINGUISHER OR COOLANT DIRECTLY ON THE INFLATED TIRE OR WHEEL. AN EXPLOSION CAN BE CAUSED AND INJURY TO PERSONS CAN OCCUR.

WARNING: THE BRAKES, WHEELS AND TIRES CAN BE VERY HOT. IT MAY BE NECESSARY TO WAIT 2 TO 3 HOURS BEFORE THE TEMPERATURE DECREASES TO A LEVEL THAT THEY CAN BE TOUCHED. INJURY TO PERSONS CAN OCCUR.

(1) Examine the tires, wheels, and brakes

(a) Examine the tires on the axles where all tires are inflated (AMM 32-45-04/601).

(b) Examine the wheels on the axles where all tires are inflated (AMM 32-45-03/601).

(c) Examine the brakes on the axles where all tires are inflated (AMM 32-41-08/601).

(d) Remove the main gear tires and wheels on the axles where some or all of the tires are deflated. Do this step after the landing gear is cool and safe to go near (AMM 32-45-01/401).

(e) Remove and examine the brakes on the axles where some or all of the tires are deflated (AMM 32-41-08/401).

(f) Remove the antiskid transducers on the axles where some or all of the tires are deflated (AMM 32-42-06/401).

S 882-125

(2) Examine the axles where some or all of the tires have deflated as follows (Fig. 202):

(a) Examine the outer diameter part of the axles that are chrome plated for heat damage.

1) Look for blue spots or other discoloration.

a) If you see signs of discoloration, remove the axle for overhaul.

(b) Examine the outer diameter part of the axles that are painted (green primer or light gray enamel).
1) Look for discoloration or blisters.

NOTE: Green primer will change to a light brown or black color. Light gray paint will change to a yellow color.

a) If the paint shows only a small discoloration, more heat damage inspections can be deferred as defined here: Complete the Heat Damage Inspection after the airplane gets back to the primary base. Do not land more than three times before you complete the Heat Damage Inspection. Light gray paint will change to a yellow color.
b) If the paint shows signs of heat damage, and the damage cannot be considered small, do the Heat Damage Inspection.

2) If the paint has discolored or blistered, examine the cadmium (or cadmium/titanium) plating. Look for a white oxide material and blistered or melted plating.
a) If the plating shows signs of heat damage, replace the components.

NOTE: Heat damage can cause cadmium diffusion into steel substrate and is not found by the etch procedure.

(c) Examine the paint (green primer or light gray enamel) on the inner surfaces (bore) of the axle with a borescope.
1) Use the borescope to a minimum depth of 23 inches.
2) Look for discoloration or blistering.

NOTE: Green primer will change to a light brown or black color. Light gray paint will change to a yellow color.

a) If the paint shows only a small discoloration, more heat damage inspections can be deferred as defined here: Complete the Heat Damage Inspection after the airplane gets back to the primary base. Do not land more than three times before you complete the Heat Damage Inspection.
b) If the paint shows signs of heat damage, and the damage cannot be considered small, do the Heat Damage Inspection.

S 212-124
(3) Examine the main landing gear side brace downlock sensor (AMM 32-61-02/201).

TASK 05-51-14-212-111

4. Heat Damage Inspection

A. General

(1) This inspection is used to find if the high strength steel that showed signs of heat damage, had changed. It will look for a change in the temper or heat treat properties.

(2) This procedure can be used for local etch of very large parts, repaired surfaces, or parts which cannot be baked after the etch. The local swab with Nital, with or without the desmutting additive, is preferred over the ammonium persulphate inspection procedure. Nital is preferred because it is more sensitive to damage, it is less reactive, and the results are easier to interpret.

(3) The Local Nital Etch Inspection does not require a bake for hydrogen embrittlement relief after the etch.

(4) The Local Ammonium Persulphate Etch Inspection does not require a bake for hydrogen embrittlement relief after the etch.

(5) This procedure will require removal of the brake sleeve and the wheel spacer.

B. Equipment

(1) Brushes

(2) A32079-1 Brake Sleeve Puller

C. Consumable Materials

(1) See the table titled Solution Details later in this procedure.

(2) Air - Clean, dry, compressed

(3) G00034 Cheesecloth

(4) G00270 Tape - Scotch Flatback Masking 250

(5) B00168 Wet and Dry Abrasive Paper - Number 400 or finer

D. Reference

(1) AMM 32-45-01/401, Main Gear Wheel and Tire

(2) AMM 32-11-18/401 Main Landing Gear

E. Prepare for the Procedure

S 842-126

(1) Gain access to the surface that will be inspected for heat damage using the etch inspection procedure.

(a) Remove the brake sleeve using the brake sleeve puller, A32079-1.

(b) Remove the wheel spacer.

F. Solution Preparation

S 802-159

(1) The following solutions will need to be prepared and used at certain points during the procedure:

Table 201: Solution Details			
		Control Limits	
Solution	Initial Makeup *[1]	Chemical	Temperature
Alkaline Rinse	5% by weight sodium hydroxide in water *[2]	4-6% by weight	60-212°F
Ammonium Persulfate	10% by weight ammonium persulfate in water	*[3]	Room
Cadmium-titanium plate stripping (BAC5771 Solution 1)	12% by weight ammonium nitrate in water	10-15% by weight	Room
Cadmium Spot Check Solution 1 Solution 2	10% by weight ammonium nitrate in water 5% by weight sodium sulfide in water	- - - - - - - -	Room Room
Nital with anti-smut additive	4% nitric acid in water plus 3.5% JAR 3N anti-smut additive	3-5% HNO3 *[4]	Room

*[1] All concentrations are percent by volume unless shown as weight percent.
*[2] Other alkaline cleaners with a minimum pH of 12 can be used as a rinse
*[3] This solution is unstable and must be used within 72 hours after you make it. Laboratory analysis and performance checks are not necessary.
*[4] It is not possible to measure the quantity of anti-smut additive after it is in the solution. The strength of this agent is not important, but add small amounts of the agent if smut occurs during usual etching times and conditions.

G. Local Nital Etch Inspection (Preferred)

S 842-127

(1) Make these solutions as indicated in the Solution Details table, Table 201:
(a) Nital solution with anti-smut additive
(b) Cadmium-titanium plate stripping solution
(c) Alkaline rinse solution
(d) Cadmium spot check solutions 1 and 2

S 842-128

(2) Mask off all areas that will not be etched.

S 152-130

(3) Using the cadmium-titanium stripping solution, chemically remove the plating in the area to be etch examined.

S 152-131
(4) Use the cadmium spot check solutions to make sure all the plating is removed.
(a) Put a drop of cadmium spot check solution 1 on the test spot and let it stay for about 30 seconds.
(b) Soak up the drop onto a piece of filter paper.
(c) Add a drop of cadmium spot check solution 2 to the filter paper.
1) If the filter paper turns yellow, then some cadmium remains on the surface of the part. If this occurs, then clean the surface per SOPM 20-30-03.

S 202-157
(5) After the cadmium plating has been completely removed, apply Nital etch solution at room temperature smoothly and continuously with a saturated piece of cheesecloth or equivalent for 30-60 seconds.

S 172-133
(6) Rinse immediately with hot water, cold water, or alcohol.

S 172-134
(7) Blow dry immediately with clean, dry air.

S 212-135
(8) Examine the part under bright light (200 foot candles minimum) without magnification for signs of heat damage. Refer to the section titled Interpretation of Results.

S 392-136
(9) Apply MIL-C-11796, Class 3 corrosion preventive compound or MIL-L-7870 oil to the surface.

S 802-137
(10) If applicable, do all other finishing operations specified by the overhaul instructions such as shot peening, honing, lapping, and plating after the etch operations are completed.

H. Local Ammonium Persulphate Etch Inspection (Alternate)

S 842-158

WARNING: AMMONIUM PERSULFATE IS AN OXIDIZER AND AN IRRITANT. IT CAN CAUSE FIRE OR EXPLOSION IF MIXED WITH FLAMMABLE MATERIALS AND CAN START A FIRE IN ORGANIC MATERIALS. USED SWABS COULD CAUSE A FIRE OR EXPLOSION. THIS COMPOUND CAN BURN THE SKIN. KEEP THIS COMPOUND AWAY FROM SKIN, EYES, OR CLOTHING. IMMEDIATELY FLUSH THE COMPOUND FROM THE SKIN OR EYES WITH A FLOW OF WATER, AND GET MEDICAL HELP.

(1) Make these solutions as indicated in the Solution Details table (Table 201):
   (a) Ammonium persulfate solution
   (b) Alkaline rinse solution
   (c) Cadmium-titanium-plate stripping solution
   (d) Cadmium spot check solutions 1 and 2.

S 842-139

(2) Mask off all areas not to be etched.

S 152-140

(3) With the cadmium-titanium stripping solution, chemically remove the plating in the area to be etch examined.

S 152-141

(4) Use the cadmium spot check solutions to make sure all of the plating is removed.
   (a) Put a drop of cadmium spot check solution 1 on the test spot and let it stay for about 30 seconds.
   (b) Soak up the drop onto a piece of filter paper.
   (c) Add a drop of cadmium spot check solution 2 to the filter paper.
      1) If the filter paper turns yellow, then some cadmium remains on the surface of the part. If this occurs, then clean the surface per SOPM 20-30-03.

S 162-115

WARNING: DO NOT LET THE ETCHANT SOLUTION TOUCH THE CADMIUM PLATED SURFACES. POISONOUS FUMES CAN OCCUR AND CAUSE INJURY TO PERSONS.

(5) After the cadmium plating has been completely removed, apply ammonium persulphate solution at room temperature smoothly and continuously with a saturated piece of cheesecloth or equivalent material for 30-60 seconds.

S 172-143

(6) Rinse immediately in hot water, cold water, or alcohol.

S 172-144
(7) Apply alkaline rinse solution with a swab to neutralize the etch solution.

S 172-145
(8) Blow dry immediately with clean, dry air.

S 212-146
(9) Examine the part under bright light (200 foot candles minimum) without magnification for signs of heat damage. Refer to the section titled Interpretation of Results.

S 392-147
(10) Apply MIL-C-11796, Class 3 corrosion preventive compound or MIL-L-7870 oil to the surface.

S 802-148
(11) If applicable, do all other finishing operations specified by the overhaul instructions such as shot peening, honing, lapping and plating after the etch operations are completed.

I. Interpretation of Results

S 202-149
(1) Unburned areas of an etched part will be a constant gray or black color without reflections when cleaned and etched. This color change is not a problem and can be removed with fine aluminum oxide abrasive cloth.

S 202-150
(2) Retempering burns (overtempered martensite) will show as darker areas on the etched part. This indicates that the surface temperature was hotter than the normal tempering temperature of the material during grinding or machining operations and will result in local softening of the surface material. Retempering burns on through-hardened material in the lower heat treat ranges, 180 to 220 ksi, will not be easy to see because the original tempering temperature is sufficiently high that all etched areas will be dark in color. This type of burn usually results in decreased strength and fatigue life.

S 202-151
(3) Rehardening burns (untempered martensite) will show as white or light-colored areas on the etched part. Such burns will normally be surrounded by a black retempered area of overtempered martensite. This indicates that the surface temperature was hotter than the austenite transformation temperature of the material during grinding or machining operations. This type of burn results in local hardened areas of untempered martensite which will usually decrease the fatigue life and toughness of the part and increase the risk of hydrogen embrittlement and stress corrosion.

S 202-152
(4) Ground surfaces of carburized parts that are deficient in carbon or have had too much material removed during grinding will appear in light color when compared to an unburned sample with normal case carbon content.

S 202-153
(5) A metallurgist can help when you are not sure about the results of the etch. The Barkhausen inspection (BAC 5653) can also help.

J. Put the Airplane Back to its Usual Condition

S 122-118
(1) Remove the etch with fine aluminum oxide abrasive cloth or equivalent.

NOTE: Do this step if the part is serviceable. If it is not serviceable, install replacement parts.

S 372-119
(2) Refinish the surface with the appropriate primer and paint.

S 422-154
(3) Re-install the wheel spacer.

S 422-155
(4) Re-install the brake sleeve.

NOTE: The shrink-fit procedure in SOPM 20-50-03 can be used for brake sleeve installation.

S 422-120
(5) Install replacement tires and wheels (AMM 32-45-01/401).

BRAKE SEIZURE CONDITION (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

TASK 05-51-15-212-001

1. Brake Seizure Conditional Inspection

A. References

(1) AMM 05-51-14/201, High Energy Stop/Heat Damage Condition
(2) AMM 32-45-03/601, Wheel Inspection
(3) AMM 32-45-04/601, Tire Inspection
(4) AMM 32-41-08/401, Main Gear Wheel Brake
(5) AMM 32-41-08/601, Main Gear Wheel Brake
(6) AMM 32-45-00, Main Gear Wheel and Tire

B. Procedure to Inspect the Main Landing Gear Wheels, Tires, and Brakes.

S 212-009

(1) Do this task: Wheel Inspection (Wheel removed from the airplane) (AMM 32-45-03/601).

S 212-010

(2) Do this Task: Tire Inspection (AMM 32-45-04/601).

S 212-012

(3) Do this Task: Main Landing Gear Brake (AMM 32-41-08/401).

S 212-011

(4) Remove the seized brake unit to this task: Main landing gear brake removal (AMM 32-41-08/401).

NOTE: The brake assembly must be sent to the shop for disassembly and detailed inspection.

S 212-005

(5) Inspect the wheel bearing seal adjacent to the brake and replace the seal if it is damaged by heat (AMM 32-41-08/401).

S 212-006

(6) Inspect the joint on the axles and on the adjacent areas of the truck beam. Look for a brown shade color that is caused by overheating (AMM 05-51-14/201).
(a) If the paint is a brown shade color, repair the damage as necessary.

S 212-007

(7) Inspect the inflated tires and wheels for damage you can see (AMM 32-45-00).

BURST/FLAT SPOTTED TIRES OR TIRE TREAD LOSS (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

1. General
   A. The examinations that follow are for conditions where tires are burst or flat spotted or have tire tread loss.
   B. The Burst/Flat Spotted tire examinations is one task and are divided into two phases. Phase I examinations are for conditions where only one tire is flat spotted or burst. Phase II examinations are for conditions where multiple tires are flat spotted or burst. These conditions are because of a locked wheel slide condition (not a tire structural failure) and the cause is not apparent. The examinations must be made in the sequence given in this section.
   C. This section of the inspection is only required in the event of a tire burst inside of the wheel well. If the wheel well tire burst causes damage to the forward wheel well bulkhead then the aileron, spoiler and speed brake sections of this inspection need to be completed. If the wheel well tire burst causes damage to the rear wheel well bulkhead then the leading edge and trailing edge flap sections of this inspection need to be completed. If there is no obvious visual damage in the wheel well or if the visual inspection results are unclear then the entire wheel well inspection must be completed.
   D. The Tire Tread Loss examination is when a landing gear tire loses a tread. When this happens, a careful examination of some affected areas is necessary. This examination looks for damage and/or blockage caused by pieces of the tire.

TASK 05-51-16-212-001

2. Burst/Flat Spotted Tires Conditional Inspection
   A. References
      (1) AMM 27-11-00/501, Aileron Trim Test
      (2) AMM 27-11-08/601, Aileron Lateral Control Feel, Centering and Trim Mechanism
      (3) AMM 27-11-36/601, Aileron Control Overide Mechanism
      (4) AMM 27-11-48/601, Inboard Aileron PCU Test

(5) AMM 27-11-49/601, Outboard Aileron PCU Test
(6) AMM 27-51-00/501, Trailing Edge Flap Test
(7) AMM 27-51-00/000, Alternate Trailing Edge Flap Operation
(8) AMM 27-61-00/501, Spoiler and Speed Brake Test
(9) AMM 27-81-00/601, Leading Edge Flap Test
(10) AMM 29-11-16/401, Hydraulic Return Filter
(11) AMM 32-41-08/601, Main Gear Wheel Brakes
(12) AMM 32-42-00/501, Antiskid/Autobrake System
(13) AMM 32-44-00/501, Parking Brake System
(14) AMM 32-45-03/601, Wheels and Tires

B. Phase I Single Flat Spotted or Burst Tire Examinations

S 712-002
(1) Make sure the brake will operate correctly and is in a serviceable condition (AMM 32-41-08/601).

S 212-003
(2) Examine the wheel for cracks or loose wheel bearings (AMM 32-45-03/601).

S 712-004
(3) Make sure the brake will release correctly (AMM 32-42-00/501).

S 212-005
(4) Make sure the routing of the hydraulic lines and the wiring runs are correct (AMM 32-41-08/601).

S 712-006
(5) Do the transducer spin test to make sure that the correct brake will release when the transducer motion is stopped (AMM 32-42-00/501).

C. Phase II Multiple Flat Spotted or Burst Tire Examinations

S 712-007
(1) Make sure the brakes will operate correctly and are in a serviceable condition (AMM 32-41-08/601).

S 712-008
(2) Make sure the brakes will release correctly (AMM 32-42-00/501).

S 212-009
(3) Make sure that the hydraulic return filter is not blocked (AMM 29-11-16/401).

S 212-010
(4) Make sure the routing of the hydraulic lines and the wiring runs are correct (AMM 32-41-08/601).

S 712-011
(5) Do the transducer spin test to make sure that the correct brake will release when the transducer motion is stopped (AMM 32-42-00/501).

S 712-012

(6) Make sure the parking brake valve operates correctly. Also make sure that the valve is fully open when the parking brake is released (AMM 32-44-00/501).

S 742-013

(7) Do a BITE test for the Antiskid/Autobrake system. Make sure the system has continuity (AMM 32-42-00/501).

D. Wheel Well Tire Burst Examination

S 752-022

(1) Make sure that the aileron actuating and control systems operate correctly, do the following procedures:
   (a) Aileron Trim Test/Adjustment (AMM 27-11-00/5)
   (b) Aileron PCUs Inspection/Check (inboard) (AMM 27-11-48/6)
   (c) Aileron PCUs Inspection/Check (outboard) (AMM 27-11-49/6)
   (d) Aileron Lateral Control Feel, Centering and Trim Mechanism Inspection/Check (AMM 27-11-08/6)
   (e) Aileron Control Overide Inspection/Check (AMM 27-11-36/6)

S 752-023

(2) Make sure that the leading and trailing edge flap actuating and control systems operate correctly, do the following procedures:
   (a) Trailing Edge Flap Adjustment/Test (AMM 27-51-00/5)
   (b) Alternate Trailing Edge Flap Operation (AMM 27-51-00/0)
   (c) Leading Edge Flap System Inspection/Check (AMM 27-81-00/6)

S 752-024

(3) Make sure that the spoiler and speed brakes actuating and control systems operate correctly, do the following procedures:
   (a) Spoiler and Speed Brake Adjustment/Test (AMM 27-61-00/5)

TASK 05-51-16-212-014

3. Tire Tread Loss Conditional Inspection

A. General

(1) When a landing gear tire loses a tread, a careful examination of some areas is required. These examinations look for damage and/or blockage caused by pieces of the tire.

(2) Damaged caused by the tire pieces can be seen as rubber and/or bitumen marks on the surface of the structure.

B. References

(1) AMM 32-45-04/601, Tires

C. Procedure

S 212-019
(1) Examine the areas that follow for damage, delamination or local separation, and soft spots due to core crush:

NOTE: To find delamination or local separation areas tap the surface with a coin. To find areas of core crush, push on the surface.

(a) Wing Upper Inboard Fixed Trailing Edge Panel
(b) Trailing Edge Flaps
(c) Flap Canoe Fairing
(d) Automatic Direction Finder Sense Antenna
(e) Lower Fuselage Wing-to-Body Fairing Panels
(f) Examine the trailing edge flap jackscrews, actuating linkages and rods for damage and blockage due to pieces of tire.

S 212-015
(2) Examine the landing gear wheel well areas for damage and blockage from pieces of the tire.

NOTE: Carefully examine the hydraulic plumbing, flap torque tubes, and control cables and mechanisms for damage or distortion.

S 212-016
(3) Examine the landing gear assemblies, related components and hydraulic lines for damage and/or hydraulic fluid leakage.

S 212-017
(4) Examine the wheel well doors and wheel well door actuating rods for damage and/or blockage from pieces of the tire.

S 212-026
(5) Examine the lower surface of the spoilers for damage.

S 212-018
(6) Examine the other tires for possible damage (AMM 32-45-04/601).

NOTE: Carefully inspect the other tires for slash and/or wire penetration damage of the tread or the sidewall.

WHEEL BEARING FAILURE/DAMAGE CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This section gives an inspection procedure for landing gear wheels, brakes, axle sleeves, and axles after a wheel bearing failure.
   B. The degradation of wheel bearing components can occur as follows:
      (1) Lubrication that is incorrect or not sufficient
      (2) A decrease of the preload
      (3) Unwanted material in the bearing
      (4) Other damage that occurs.
   C. When you operate with damaged bearings, it will cause too much heat in the adjacent parts. Some of these parts are:
      (1) The axles
      (2) The axle sleeves
      (3) The spacers
      (4) The wheel hubs.
   D. These parts can be scored if the bearing damage causes a seizure.
   E. Make an inspection of the wheel bearings carefully each tire change as shown in the wheel vendor's recommended procedures.

TASK 05-51-17-212-001

2. Wheel Bearing Failure
   A. General
      (1) The failure of a wheel bearing can be found by the symptoms or conditions that follow:
         (a) Contamination of the wheel bearing grease with unwanted material
         (b) Metal particles in the area of the wheel and the brake
         (c) The hubcap is damaged or is not there (main gear only)
         (d) The wheel is damaged
         (e) The wheel brake for the main landing gear is damaged
         (f) A canted wheel more than the specifications permit
         (g) The wheel and tire assembly are not there.
   B. Standard Tools and Equipment

      WARNING: THE POWER CABLE OF THE BORESCOPE MUST BE IN A GOOD CONDITION. IF THERE ARE CIRCUMFERENTIAL CUTS, FRAYED AREAS, OR RUPTURES TO THE EXTERNAL RUBBER COVER OF THE CABLE, INJURY TO PERSONS CAN OCCUR.

      (1) Borescope - "Commercially Available" (Alternative).
      (2) Borescope - Fiber Optic Light Supply - Model BLS-97, American Cystoscope Makers Inc., Industrial Division, Pelham, New York
      (3) Borescope - Fiber Optic Light Supply - Model BLS-98, American Cystoscope Makers Inc., Industrial Division, Pelham, New York

(4) Rigid Borescope - Model BF0-3920A, American Cystoscope Makers Inc., Industrial Division, Pelham, New York
(5) Flexible Borescope - Model BF1F-3127DD, Cystoscope Makers Inc., Industrial Division, Pelham, New York
(6) Fiber Light Carrier - Model F0-400-5A, Cystoscope Makers Inc., Industrial Division, Pelham, New York
(7) Rigid Borescope - Model FIB 730, Richard Wolf Medical Instruments Corp., Rosemont, Illinois
(8) Rigid Borescope - Model FIB 740, Richard Wolf Medical Instruments Corp., Rosemont, Illinois
(9) Rigid Borescope - Model FIB 760, Richard Wolf Medical Instruments Corp., Rosemont, Illinois

C. References
(1) AMM 32-11-26/401, Main Gear Brake Sleeve - Removal/Installation
(2) AMM 32-11-26/601, Main Gear Axle - Inspection/Check
(3) AMM 32-41-08/401, Main Gear Wheel Brake - Removal/Installation
(4) AMM 32-41-08/601, Main Gear Wheel Brake - Inspection/Check
(5) AMM 32-42-06/401, Antiskid Transducer - Removal/Installation
(6) AMM 32-45-01/401, Main Gear Tire and Wheel - Removal/Installation
(7) AMM 32-45-02/401, Nose Gear Wheel - Removal/Installation
(8) AMM 32-45-03/601, Wheels - Inspection/Check
(9) AMM 32-45-04/601, Tires

D. Procedure

S 212-002
(1) Do the wheel inspection (AMM 32-45-03/601).
(a) When a main wheel shows signs of a wheel bearing failure, or there are other problems, remove the wheel and tire assembly (AMM 32-45-01/401).

NOTE: The wheel and tire assembly, and the bearings must be sent to the shop for disassembly and a detailed inspection.

(b) When a nose wheel shows signs of a wheel bearing failure, or there are other problems, remove the wheel and tire assembly (AMM 32-45-02/401).

NOTE: The wheel and tire assembly, and the bearings must be sent to the shop for disassembly and a detailed inspection.

(c) Make sure the correct wheel bearings are installed in the wheels that are removed.

S 212-003

(2) Do the inspections of the brake assembly (main landing gear only) (AMM 32-41-08/401).
   (a) Examine the parts that follow if the failure of a wheel bearing let the wheel touch the brake:
      1) Rotors
      2) Stators
      3) Torque tube backing plate
      4) Other parts of the brake assembly that can become damaged.
   (b) When a brake assembly shows signs of damage or does not operate correctly, remove the brake assembly (AMM 32-41-08/401).

NOTE: The brake assembly must be sent to the shop for disassembly and a detailed inspection.

S 212-004

(3) Do the inspection of the main gear axle, the wheel spacer, and the brake sleeve (AMM 32-11-26/601).
   (a) Remove the brake assembly (AMM 32-41-08/401).
   (b) Visually examine the outer diameter of the axle for scoring or discoloration of the chrome plate.
      1) When you find scoring, discoloration, or other damage, repair or replace the axle (AMM 32-11-26/401).
   (c) Examine the brake sleeve for damage (AMM 32-11-26/601).

NOTE: Make sure the installation of the brake sleeve is correct with the temperature differential procedure in the Standard Overhaul Practices Manual (SOPM 20-50-03).

1) Repair or replace the brake sleeve if it is necessary.

(d) Examine the wheel spacer for damage
1) Repair or replace the wheel spacer when it is necessary.

S 212-033

(4) Examine the paint (green primer or light gray enamel) on the outer surfaces of the axle for discoloration or blisters.
(a) Green primer will change to a light brown or black color.
(b) A light gray enamel paint will change to a yellow color.
(c) If the paint is discolored or blistered, examine the cadmium (or cadmium/titanium) plating. Look for a white oxide material, and blistered or melted plating. If the plating shows signs of heat damage, replace the axle.

NOTE: Such damage can cause cadmium embrittlement of the steel substrate. The damage is not always found by non-destructive tests such as ammonium persulphate etch.

(d) If the plating under the discolored paint shows no signs of heat damage, do the Heat Damage Inspection of the Axle procedure.
(e) If the paint shows only a small discoloration, more heat damage inspections can wait. Do the last part of the inspection after the airplane gets back to its primary location. Do not make a landing more than three times before you do this inspection.

S 012-005

(5) Remove the antiskid transducers (AMM 32-42-06/401).

S 022-034

(6) Remove the tire pressure indication system assembly if it is installed.

S 212-035

WARNING: THE POWER CABLE OF THE BORESCOPE MUST BE IN A GOOD CONDITION. IF THERE ARE CIRCUMFERENTIAL CUTS, FRAYED AREAS, OR RUPTURES TO THE EXTERNAL RUBBER COVER OF THE CABLE, INJURY TO PERSONS CAN OCCUR.

(7) Examine the green primer on the inner surfaces (bore) of the axle with a borescope.
(a) Use the borescope to a minimum depth of 16 inches and look for discoloration or blistered paint.

(b) The green primer will change to a light brown or black color.
(c) The light gray enamel paint will change to a yellow color.
(d) If the paint has discolored or blistered, examine the cadmium (or cadmium/titanium) plating. Look for a white oxide material, and blistered or melted plating. If the plating shows signs of heat damage, replace the axle.

NOTE: Such damage can cause cadmium embrittlement of the steel substrate. The damage is not always found by non-destructive tests such as ammonium persulphate etch.

(e) If the plating under the discolored paint shows no signs of heat damage, do the Heat Damage Inspection of the Axle procedure.
(f) If the paint shows only a small discoloration, more heat damage inspections can wait. Do the last part of the inspection after the airplane gets back to its primary location. Do not make a landing more than three times before you do this inspection.

TASK 05-51-17-212-036

3. Heat Damage Inspection of the Axle

A. General

(1) Do this inspection to find if the high strength steel that showed signs of heat damage has changed. It will look for a change in the temper or heat treat properties.

WARNING: DO NOT BREATHE THE FUMES OF THE SOLVENTS OR ETCH SOLUTIONS. DO NOT GET THEM IN YOUR EYES, ON YOUR SKIN, OR ON YOUR CLOTHES. INJURY TO PERSONS CAN OCCUR. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(2) This inspection will usually occur on the components of the landing gear axles. Discolored or blistered paint or plating shows that a general intense heat has changed the temper of the axle. When this occurs , the ammonium persulphate procedure must be applied to the damaged part of the axle.

B. Consumable Materials
   (1) Air - Clean, dry, compressed
   (2) Ammonium persulphate etch solution
       (a) 100 grams of ammonium persulphate per 0.27 gallon of tap water
   (3) Methyl or Isopropyl Alcohol - TT-1-735
   (4) G00034 Cheesecloth
   (5) Brushes
   (6) B00183 Trichloroethylene Solvent - BMS 11-6, types I and II
   (7) G00270 Masking tape
   (8) B00168 Wet and Dry Abrasive Paper - Number 400 or finer
C. References
   (1) AMM 32-41-08/401, Main Gear Wheel Brakes - Removal/Installation
   (2) AMM 32-45-01/401, Main Gear Wheel and Tire - Removal/Installation
D. Ammonium Persulphate Solution Procedure

S 122-052

WARNING: DO NOT BREATHE THE VAPORS OF THE SOLVENTS. DO NOT GET SOLVENTS IN YOUR EYES, ON YOUR SKIN OR ON YOUR CLOTHES. INJURY TO PERSONS MAY OCCUR.

CAUTION: DO NOT ALLOW ETCHANT TO PENETRATE MICROCRACKS IN CHROME, INCLUDING THE RUNOUT.

(1) Strip the paint from the cadmium surface with wet and dry abrasive paper applied by hand. Strip a minimum area of 0.5 inch (1.27 cm) through the area that will not be tested.

S 112-044

(2) Clean the area to be etched with solvent.

S 282-053

(3) Mask off all areas not to be etched.

S 282-054

(4) Remove the cadmium plating.

S 112-055

(5) Apply the ammonium persulphate solution with a cheesecloth on the surface to be tested, for 30 to 60 seconds.

S 162-046

WARNING: DO NOT LET THE ETCHANT SOLUTION TOUCH THE CADMIUM PLATED SURFACES. POISONOUS FUMES CAN OCCUR AND CAUSE INJURY TO PERSONS.

(6) Flush the surface with hot or cold water immediately. You can also use alcohol.

S 162-047
(7) Dry the surface with clean, dry compressed air immediately.

E. Examine the Etched Area.

S 212-048
(1) Examine the parts with a bright light and without magnification. Look for signs of burning/heat damage.
(a) Areas that are not burned on an etched part will be a constant gray color. They will be non-reflective when correctly cleaned and etched. This discoloration will not damage the part.
(b) Retempering, temper, type burns (overtempered martensite) will show as dark gray or black areas on the etched part. This shows that the surface temperature was more than the usual operating temperature of the material. This is because of a wheel bearing failure and will cause a localized softening of the surface material. This type of burn usually results in decreased strength and fatigue life.
(c) Rehardening burns (untempered martensite) will show as white or light colored areas on the etched part. These burns will usually have a black tempered area on all sides of the burn. This shows that the surface temperature was more than the critical temperature of the material. This is because of a wheel bearing failure.

NOTE: This type of burn will cause local hardened areas made up of untempered martensite. These hardened areas will usually be dangerous to the fatigue life of the part.

(d) When the etched area shows that the condition of the heat treat is not sure, do the necessary steps that follow:
1) Do a high quality metallurgical test.
2) Replace the axle.
(e) When the axle shows signs of heat damage, replace the damaged axle.

F. Put the airplane back to its initial condition.

S 122-037
(1) Remove the etch with abrasive paper.

NOTE: Do this step if the parts are serviceable. If they are not serviceable, install replacement parts.

S 142-038
(2) Stylus the cadmium plate areas where the plating was removed (SOPM 20-42-10).

S 372-039
(3) Finish the surface with the correct primer and paint.

S 412-040
(4) Install the brake sleeve.

NOTE: To make sure the installation of the brake sleeve is correct, use the temperature differential procedure in the Overhaul Manual (SOPM 20-50-03).

S 412-012
(5) Install the wheel spacer.

S 412-041
(6) Install the brake assembly (AMM 32-41-08/401).

S 412-042
(7) Install the replacement wheel and tire assembly (AMM 32-45-01/401).

BIRD/HAIL STRIKE CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. The examinations that follow are for a bird strike and a hail strike condition. Examine the external surfaces of the airplane structure in the general area of the bird/hail strike. If the initial examination shows structural damage, then the internal structure must be inspected. Also inspect the hydraulic, pneumatic, and other systems in the area of the bird/hail strike for damage. The procedures that follow are made for the airplane structure in general. But, the examinations can be confined to the general area of the bird/hail strike.

      NOTE: If the bird/hail struck the nose radome, the inside of the radome should be inspected even if no damage is found on the exterior of the nose radome. If the bird/hail did not strike the nose radome, then no radome inspections need to be performed.

   B. This inspection is provided by these two tasks:
      (1) Bird/Hail strike conditional inspection (in flight).
      (2) Hail strike on the ground conditional inspection.
   C. For allowable hail damage, refer to the analysis and continued service of airplanes with on-ground hail damage (SRM 51-10-04).

   TASK 05-51-18-212-001

2. Bird/Hail Strike Conditional Inspection
   A. References
      (1) AMM 27-51-00/201, Trailing Edge Flap System
      (2) AMM 27-81-00/201, Leading Edge Flap System
      (3) FIM 71-05-00, Engine
      (4) FIM 71, Fault Code Diagrams

B. Bird/Hail Strike Conditional Inspection

S 212-021

WARNING: PUT ON EQUIPMENT FOR PROTECTION BEFORE YOU TOUCH THE BIRD CARCASS, BLOOD, GUTS, AND RESIDUE. THIS CAN CONTAIN BACTERIA AND VIRUSES THAT CAN CAUSE ILLNESSES, AND INJURIES TO PERSONNEL.

WARNING: DO NOT LET THE BIRD CARCASS OR OTHER PIECES OF THE BIRD TOUCH YOUR SKIN. DISCARD THE BIRD PIECES IN A PLASTIC DISPOSAL BAG. THE BIRD PIECES CAN CONTAIN INFECTIOUS MATERIALS (BACTERIA AND VIRUSES). THEY CAN CAUSE ILLNESSES, AND INJURIES TO PERSONNEL.

WARNING: PUT THE BIRD PIECES INTO PLASTIC DISPOSAL BAGS WHEN YOU REMOVE THEM FROM THE AIRPLANE. OBEY THE AIRLINE POLICY, LOCAL HEALTH DEPARTMENT, AND LAW ENFORCEMENT REGULATIONS WHEN YOU DISCARD THIS MATERIAL. OBEY THESE INSTRUCTIONS TO PREVENT INJURIES TO PERSONNEL.

(1) Before you touch any area of the aircraft that may have been affected by a bird strike, do this task: Bird Strike Cleaning (AMM 12-25-04/201).

S 862-022

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE FLAP/SLAT ACTUATION SYSTEMS. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE FLAPS/SLATS MOVE. FLAP/SLAT ACTUATION SYSTEMS MUST NOT BE OPERATED DURING THIS INSPECTION. FAILURE TO OBEY CAN CAUSE INJURY TO PERSONS.

(2) Do the deactivation procedure for the leading edge slat system (Ref 27-81-00).

S 862-003

(3) Do the deactivation procedure for the trailing edge flap system (Ref 27-51-00).

S 862-024

(4) Do the examinations that follow:

(a) Examine the wing, nacelle strut, and the horizontal and vertical stabilizer leading edge fairing. Look for displacement, distortion, fastener hole elongation or tearout, and paint that has flaked. Also look for skin cracks, and fasteners that have pulled out or are not there.

(b) Examine the strut panels, doors, and structure for buckling, cracks, and fasteners that have pulled out or are not there.

(c) Examine the leading and the trailing edge structure of the wing, the panels, and the doors.

NOTE: Examine the external side (surface) of honeycomb panels for cracks, delamination, soft spots, core damage, displacement, fasteners that have pulled out or are not there.

1) If damage is found on the external side (surface) of a honeycomb panel then the inside surface of the honeycomb panel must be examined for cracks, delamination, soft spots, and core damage.

(d) Examine the leading edge slat mechanism and track fairing links. Look for distortion, cracks, misalignment, or other signs of distress.

(e) Examine the trailing edge flap mechanism and track fairing links. Look for distortion, cracks, misalignment, or other signs of distress.

(f) Examine the control surfaces. Look for binding, too much play, misalignment, distortion, or displacement of skins. Also look for fasteners that have pulled out or are missing.

(g) Examine the nose landing gear doors and linkage. Look for distortion, cracks, and other signs of distress.

(h) Examine the main landing gear doors and linkage. Look for distortion, cracks, and other signs of distress.

(i) Examine the pilots' windows for delamination, spalling, or cracks. Also examine the adjacent structure for distortion, cracks, and fasteners that have pulled out or are not there.
(j) Examine the forward-body nose section "eyebrow" area above the windows and radome. Look for cracks, distortion, delamination, misalignment, and displacement of the skins. Also look for fasteners that have pulled out or are not there.
(k) Examine the internal and external areas of the radome. Look for honeycomb damage and for soft spots.

S 212-005

(5) Perform a general visual inspection of each engine nose cowl and the engine intake for signs of bird strike and foreign object damage.
(a) If there is an indication of a bird strike or foreign object damage, do the foreign object damage inspection (Ref 72-00-00).

NOTE: If engine shows signs of a bird/hail strike or suspected bird/hail strike on the nacelle, refer to the applicable bird strike trouble shooting procedures (FIM 71 FAULT INDEX CODE).

TASK 05-51-18-212-014

3. Hail Strike on the Ground Conditional Inspection

A. References
(1) 27-51-00/201, Trailing Edge Flap System
(2) 27-81-00/201, Leading Edge Flap System

B. Access
(1) Location Zones

200	Upper Half of Fuselage
300	Empennage and Body Section 48
400	Power Plants and Nacelle Struts
500	Left Wing
600	Right Wing
700	Landing Gear and Landing Gear Doors
800	Doors

C. Procedure

S 042-013

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE FLAP/SLAT ACTUATION SYSTEMS. INJURY TO A PERSON OR DAMAGE TO EQUIPMENT CAN OCCUR IF THE FLAPS/SLATS MOVE. FLAP/SLAT ACTUATION SYSTEMS MUST NOT BE OPERATED DURING THIS INSPECTION. FAILURE TO OBEY CAN CAUSE INJURY TO PERSONS.

(1) Do the deactivation procedure for the leading edge slat system (AMM 27-81-00/201).

S 042-011
(2) Do the deactivation procedure for the trailing edge flap system (AMM 27-51-00/201).

S 212-012
(3) Do the examinations that follow:

NOTE: When you examine the honeycomb panels, look at the two sides for cracks, delaminations, soft spots and core damage.

(a) The nose radome.
(b) The wings, for signs of hail damage to the areas that follow:
    1) All horizontal surfaces.
    2) Leading edges.
    3) Trailing edges.
    4) Panels.
(c) The leading edge fairings on the horizontal stabilizer.
(d) The leading edge fairings on the vertical stabilizer.
(e) The flight control surfaces.
(f) The external fuselage structure.
    1) If signs of hail damage to the external fuselage structure is found, refer to SRM 51-10-04 for the analysis and continued service of airplanes with on-ground hail damage.
(g) The passenger and cargo doors.
(h) The flight compartment windows, for signs of hail damage as follows:
    1) Cracks.
    2) Displacement of the outer window.
    3) Other types of window damage.
(i) The forward fuselage section above the flight compartment windows and the radome.
(j) The wing tip fairings and navigation lights.
(k) The nacelle strut.
(l) The nose landing gear doors.
(m) The main landing gear doors.
(n) The passener compartment windows for signs of hail damage as follows:
    1) Cracks.
    2) Displacement of the outer window.
    3) Crazing.
    4) Other types of window damage.
(o) Examine the nose cowl and the engine for signs of foreign object damage.

S 222-008
(4) The allowable damage shown in the Structural Repair Manual is to be used to define the limits of damage within each component. (SRM 51-10-04).

S 442-009

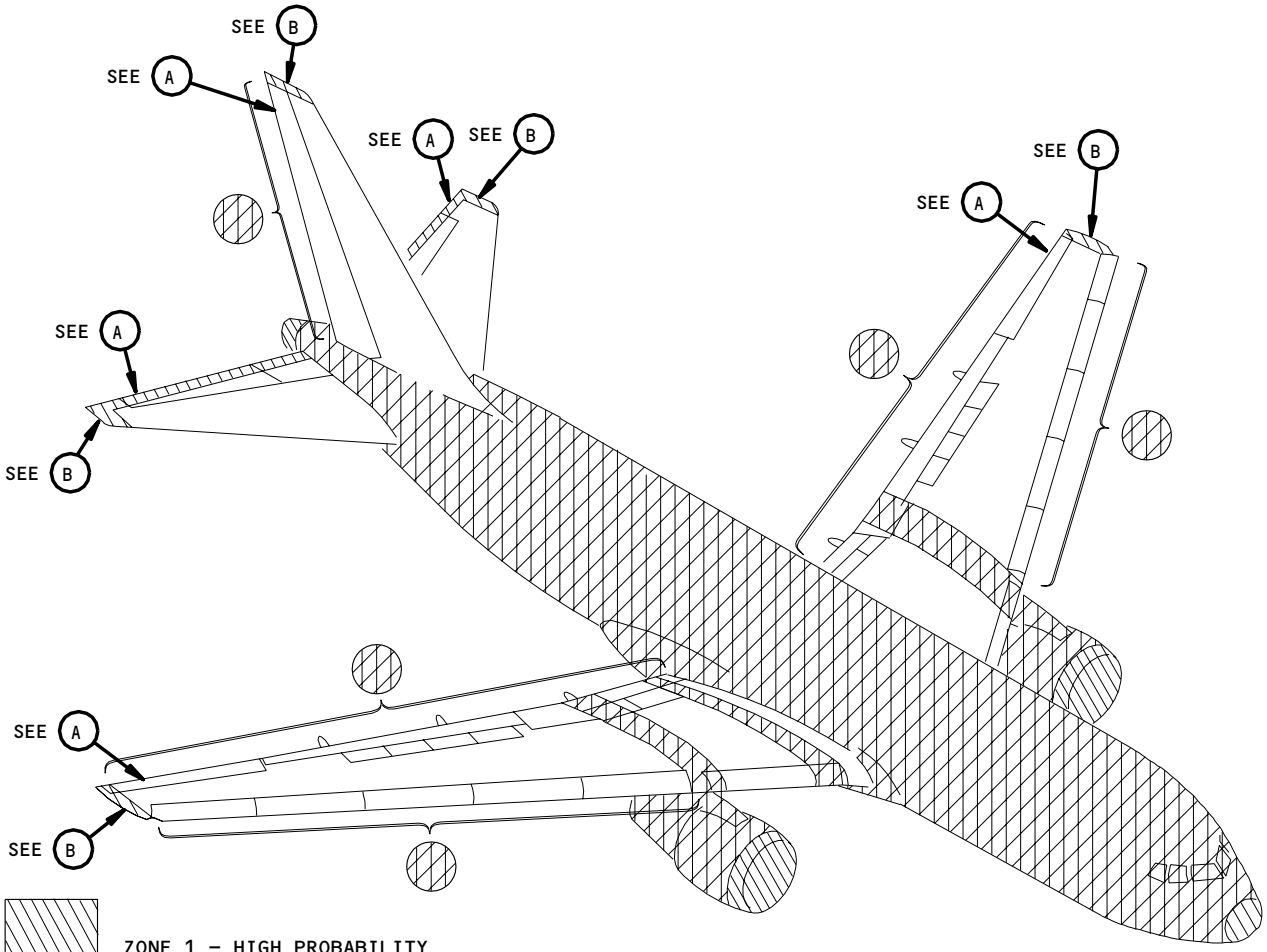
(5) Do the reactivation procedure for the leading edge slat system. (AMM 27-81-00/201).

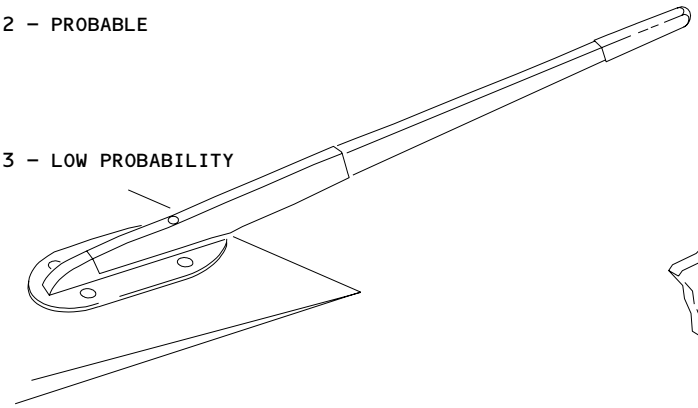
S 442-010

(6) Do the reactivation procedure for the trailing edge flap system (AMM 27-51-00/201).

LIGHTNING STRIKE CONDITION (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

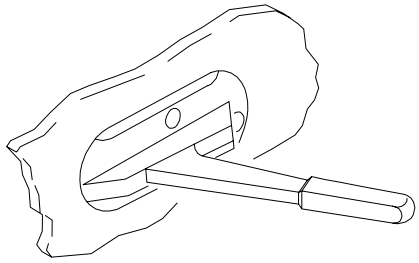
1. General
   A. The airplane design includes all necessary and known lightning strike protection measures. The airplane is an almost all external metal structure, and this type of construction is its basic protection. The metal surface is a shield that protects the internal compartments from direct lightning strikes. This also prevents entry of the electromagnetic energy into the electrical wires of the airplane. If the airplane has had a lightning strike, a general examination of the airplane must be made. This examination is used to find the areas of the strike and the point of electrical discharge. After the areas have been identified, a complete examination must be made to find all of the damage that has occurred.
   B. Lightning strikes usually cause damage in two areas. The first area of damage is the location point of the lightning strike. The second area is at the point where static electricity discharge has occurred. It is also possible that a heavy static electricity discharge could occur and the lightning did not strike the airplane.
   C. Signs of a lightning strike or electrical discharge is usually in the Critical Strike Zone (Zone 1, Fig. 201). Damage can also be found on the skin trailing edge panels, and the skin panels along the lower aft fuselage. It is also found on the antennas, vertical stabilizer (fin), horizontal stabilizer, and along the wing trailing edge (Zone 2, Fig. 201).
   D. In metallic structures, lightning damage is usually pitting or burning of small circular holes. These holes can be grouped in one location or divided around a large area. Burnt or discolored skin also shows lightning strike damage.
   E. In composite (non-metallic) structures, solid laminate or honeycomb damage shows as discolored paint. It also shows as burned, punctured, or delaminated skin plies. Damage you can not see can also be there. This damage can extend around the area you can see. Signs of arcing and burning can also occur around the attachments into the supporting structure.
   F. Airplane components have become strongly magnetized when an airplane was struck by lightning. It is possible that during the lightning discharge, heavy electrical currents flow in the metal airframe structure. The magnetic field made by such electrical current is the cause of magnetization of ferromagnetic materials.
   G. The external surface areas are where the lightning usually hits first. The surface components that it hits are the nose radome, engine nacelles, wingtips, stabilizer tips, elevators, and the vertical fin tips. Other first hit areas are the ends of the leading edge slats, trailing edge flap track fairings, and the external lights. Also body extensions such as the landing gear, waste watermasts and the pitot probes.
   H. The surface where lightning usually hits and then moves aft from the point of the strike is the fuselage. It also moves from the wing surfaces aft of the ends of the leading edge slats.





TRAILING EDGE SURFACE
INSTALLATION (EXAMPLE)

A



STABILIZER AND FIN
CAP INSTALLATION (EXAMPLE)

B

External Lighting Strike Areas
Figure 201

I. Lightning strikes can cause problems to the electrical power systems and the external light wiring. The electrical system is designed to be resistant to lightning strikes and can get a lightning strike without damage. But, a strike of unusually high intensity can possibly damage the electrical system components.

J. Frequently, a lightning strike is referred to as a static discharge. This causes problems when you refer to the static dischargers (small rod devices) found on the external surface of the airplane. These devices do not prevent the lightning strikes on the airplane. The primary function of the static dischargers is to bleed off the static charge on the airplane. This is to prevent radio interference in the airplane avionics receivers (examples are: VHF Comm, ADF, and VOR).

K. The electrical current level that goes through the dischargers is very small (measured in microamperes) compared to lightning strike electrical currents (measured in thousands of amperes). The static dischargers are frequently hit by lightning. Some of them are installed at a specified point as protection to a light or other system component. This is an added function above their normal discharge of P Static energy function.

NOTE: It is not necessary to examine the coaxial cables and the connectors if the:

Radio system had no problems during and after the incident. Operational checks were done and no problems were found.

TASK 05-51-19-212-001

2. Examine for Lightning Strike Damage

A. References

(1) AMM 23-61-01/201, Static Dischargers
(2) AMM 27-11-00/501, Ailerons
(3) AMM 27-21-00/501, Rudder
(4) AMM 27-31-00/501, Elevators
(5) AMM 28-41-00/501, Fuel Quantity Indicating System
(6) AMM 34-23-00/201, Standby Magnetic Compass
(7) AMM 53-12-01/201, Nose Radome

B. Examine the Airplane External Surface

S 212-002

(1) Do the examinations that follow:

(a) Examine the Zone 1 (Figure 201) surface areas for signs of a lightning strike.

1) Examine the internal and external surfaces of the nose radome (AMM 53-12-01/201). Look at the honeycomb sandwich structure for burns, punctures, and pin holes.
2) Examine the metallic structure for holes or pits. Look for burned or unusual colored skin or rivets.
3) Examine the external surfaces of the composite honeycomb sandwich components. Look for discolored paint, burned, punctured, or delaminated skin plies.

4) You need to use instrumental NDI methods or tap tests to find composite structure damage you cannot see.

NOTE: Damage you cannot see, such as delamination, can extend to the area you can see. Delamination can be detected by instrumental NDI methods or by a tap test. For a tap test, use a solid metal disk and tap the area adjacent to the damaged area lightly. If there is delamination, you will hear a sound that is different than the sound of a solid bonded area. Refer to Non-Destructive Testing Manual D634T301.

S 342-003

CAUTION: MAKE SURE TO SEAL OR REPAIR ALL DAMAGE. FAILURE TO SEAL OR REPAIR DAMAGE CAN CAUSE MORE INTERNAL DAMAGE BECAUSE MOISTURE CAN GET IN.

(2) Repair or seal the damaged areas.

S 212-004

(3) Examine the Zone 2 (Figure 201) surface areas for signs of a lightning strike. Make sure you look in the areas where one surface ends and the other surface starts.
   (a) Examine the pitot probes, static ports and their surrounding areas for damage. Look for burns, punctures, discolored paint and general skin distortion. If damage is found refer to SRM 51-10-03.
   (b) Examine the metallic structure for holes or pits. Look for burned or discolored skin or rivets.
   (c) Examine external surfaces of composite honeycomb sandwich components. Look for discolored paint, burned, punctured, or delaminated skin plies.
   (d) You need to use instrumental NDI methods or tap tests to find composite structure damage you cannot see.

NOTE: Damage you cannot see, such as delamination, can extend to the area you can see. Delamination can be detected by instrumental NDI methods or by a tap test. For a tap test, use a solid metal disk and tap the area adjacent to the damaged area lightly. If there is delamination, you will hear a sound that is different than the sound of a solid bonded area. Refer to Non-Destructive Testing Manual D634T301.

S 342-005

CAUTION: MAKE SURE TO SEAL OR REPAIR ALL DAMAGE. FAILURE TO SEAL OR REPAIR DAMAGE CAN CAUSE MORE INTERNAL DAMAGE BECAUSE MOISTURE CAN GET IN.

(4) Repair or seal the damaged areas.

S 202-049

(5) If the entrance and exit points are not found during the examination of zone 1 and 2 areas, examine the Zone 3 (Figure 201) surface areas for signs of a lighning strike as follows:
   (a) Examine the external surfaces carefully to find the entrance and exit points of lightning strike.
   (b) Make sure to look in the areas where one surface stops and another surface starts.
   (c) Examine the metallic structure for holes, pits, burned or discolored skin and rivets.
   (d) Examine the external surfaces of the composite components for discolored paint, burned, punctured, or delaminated skin plies.
   (e) Find composite structure damage, such as delamination, you cannot see, do one of the tests that follow.
      1) Ultrasonic Flaw Detection: NDT Part 1, 51-04-00.
      2) Tap Test Inspection of Honeycomb Sandwich Structure: NDT Part 1, 51-05-01.

S 212-031

(6) Examine all of the external lights.
   (a) Look for these items:
      1) broken light assemblies,
      2) broken or cracked lenses,
      3) other visible damage.
   (b) If you find damaged lights, do the following:
      1) Examine the following items:
         a) The first three feet (0.91 m) of wiring from the damaged light in the direction of the circuit breaker.

b) The wires to the circuit breaker.

2) Repair or replace damaged parts as necessary until the light functions properly.

3) If the circuit breaker did not trip, then no further inspections for the wiring of the damaged light are required.

4) If the circuit breaker did trip, then locate the source of the anomaly and repair as necessary.

S 712-005

(7) Make sure the navigation lamps, rotary lights, and the landing lights operate.

S 212-006

(8) Do the examinations of the flight controls that follow:

(a) If the rudder shows signs of a lightning strike, examine the surface hinges, bearings, and bondings for signs of damage.

(b) If the elevators show signs of a lightning strike, examine the surface hinges, bearings, and bondings for signs of damage.

(c) If the ailerons show signs of a lightning strike, examine the surface hinges, bearings, and bondings for signs of damage.

S 712-007

(9) Do an operational test of the rudder if there are signs of lightning strike damage (AMM 27-21-00/501).

S 712-008

(10) Do an operational test of the elevator if there are signs of lightning strike damage (AMM 27-31-00/501).

S 712-009

(11) Do an operational test of the ailerons if there are signs of lightning strike damage (AMM 27-11-00/501).

S 212-010

(12) If the wingtips / winglets show signs of a lightning strike, examine the wingtips carefully. Also look carefully at the fuel vent outlet for signs of damage.

C. Examine the Static Dischargers

S 212-011

(1) Do the examinations that follow:

(a) Visually examine all dischargers to make sure they are there and installed correctly on the mounting retainer. Also make sure they are not broken.

(b) Examine the dischargers for damage as shown by a burned and roughened coating. Also look for pitted metal discharger retainers.

(c) Examine the dischargers for broken, bent, or blunted tungsten pins. Bent pins must be made straight.

(d) Look for erosion of the discharger coating or peeling of the tip cup. The leading edge erosion of the discharger must not extend back more than 1/3 of the width of the discharger.

S 762-012

(2) Do a resistance test if a damaged static discharger is found (AMM 23-61-01/201).

D. Airplane Internal Examination

S 212-013

(1) If a lightning strike has caused a system malfunction, do a full examination of the defective system. Use the applicable maintenance manual section for that system.

S 732-014

(2) Do a check of the standby compass system only if the flight crew found a very large compass deviation (AMM 34-23-00/201).

S 212-015

(3) Make sure that the fuel quantity system is accurate. If it is not, do a check of the applicable tank units and compensator (AMM 28-41-00/501).

TASK 05-51-19-212-016

3. Inspection and Operational Check of Radio and Navigation Systems

A. General

(1) The level of checks after a lightning strike to the airplane is determined by flight crew information and the airplane condition after the incident. For example, if all the NAV/COM systems are exercised by the flight crew in flight after the lightning strike and no anomalies are found, then checks to the exercised systems would not normally be required. For systems not exercised by the flight crew in flight or systems where anomalies were found, additional checks to that system may be required. In addidtion, even if a system was exercised in flight after the lightning strike and no anomalies were found, but subsequent inspections showed lightning damage near that system antenna, additional checks of that system will be required.

B. References

(1) AMM 23-11-00/501, HF Communications System
(2) AMM 23-12-00/501, VHF Communications System
(3) AMM 34-31-00/501, ILS Navigation System
(4) AMM 34-32-00/501, Marker Beacon System
(5) AMM 34-33-00/501, Radio Altimeter System
(6) AMM 34-43-00/501 or FIM 34-43-00/101, Weather Radar System
(7) AMM 34-45-00/501, TCAS System
(8) AMM 34-51-00/501, VOR System
(9) AMM 34-53-00/501, ATC System
(10) AMM 34-55-00/501, DME System
(11) AMM 34-57-00/501, Automatic Direction Finder (ADF) System
(12) AMM 53-12-01/201, Nose Radome

C. Inspection of the Radio and Navigations Systems

S 212-017

(1) Examine the systems that follow for damage:
   (a) HF
   (b) VHF
   (c) VOR
   (d) DME
   (e) ATC
   (f) ILS
   (g) ADF
   (h) Radio Altimeter
   (i) Marker Systems
   (j) ACARS
   (k) GPS
   (l) SATCOM (If installed)
   (m) TCAS
   (n) Airborne telephone
   (o) Emergency locator transmitter (if installed)
      1) Examine the antennas for damage.
         a) Replace damaged antennas as necessary.
      2) Examine the coaxial cables and connectors for damage if it is necessary.

         NOTE: If one or more of the previous systems have problems with their operational checks, examine and do a test of the coaxial cables and connectors.

         a) Replace the damaged coaxial cables if it is necessary.

S 212-018

(2) Examine the Radar System (Radome) as follows (AMM 53-12-01/201):
   (a) Examine the radome. Look for pin holes, punctures, and paint that has chipped.
   (b) Examine the radome bonding straps. Make sure they are attached correctly to the airframe.
   (c) Look at the condition of the lightning diverter strips. Repair or replace them if they are damaged.
   (d) If the radome is damaged, examine the antenna and the waveguide for damage.

D. Radio and Navigation System Operational Checks

S 712-019

(1) HF Systems (if installed) (AMM 23-11-00/501).
   (a) Do an operational check on some frequencies of each HF system.
   (b) Do a ground check of each system with a station that is at least 100 miles away.
   (c) Monitor several frequencies on each system to make sure the HF receiver operates.

S 712-021
(2) VHF System (AMM 23-12-00/501).
(a) Do a loading check on some frequencies of each VHF transmitter. Make sure that all transmitter meter indications are correct.
(b) Do a ground check of each VHF system with the local control tower facility to make sure the system works.
(c) Monitor several frequencies on each system to make sure the VHF receiver works.

S 712-022
(3) VOR System (AMM 34-51-00/501).
(a) Do a system operational check with a local VOR station.
1) If a VOR Test Set is available, test the operation of the VOR.

S 712-023
(4) ADF System (AMM 34-57-00/501)
(a) Do an operational check of the receivers on Ant, Loop, and ADF functions.
(b) Select a local AM broadcast or non directional beacon (NDB) station, then verify loud and clear ADF audio is heard and the ADF needle points to the selected bearing (station).

S 712-024
(5) Radar System (AMM 34-43-00/501)
(a) Do an operational check of the Radar System. Make sure that all of the receiver/transmitter units fault lights are off.
(b) Make sure the system reads targets at applicable ranges.

S 712-025
(6) Radio Altimeter System (AMM 34-33-00/501)
(a) Do an operational check of the low range altimeter system.

S 712-026
(7) DME System (AMM 34-55-00/501)
(a) Do an operational check of the system on a local station or a ramp tester.

S 712-027
(8) ATC System (AMM 34-53-00/501)
(a) Do an operational check of the transponder with a ramp tester.

S 712-028
(9) Marker Beacon System (AMM 34-32-00/501)
(a) Do an operational check of the system with a marker test set.

S 712-029
(10) ILS System (AMM 34-31-00/501)
(a) Do an operational check of the system on a local station or with a ramp tester.

S 712-035
(11) Autopilot (Flight Control) (AMM 22-10-00/501).
(a) Do an operational check on the Autopilot (Flight Control).

S 712-036
(12) Maintenance Monitor (AMM 22-41-00/501).
(a) Do an operational check on the maintenance monitor.

S 712-037
(13) SELCAL System (AMM 23-21-00/501).
(a) Do an operational check on the SELCAL system.

S 712-038
(14) ACARS (AMM 23-22-00/501).
(a) Do an operational test on the ACARS.

S 712-039
(15) Emergency Locator Transmitter (if installed) (AMM 23-24-00/501).
(a) Do an operational test on the emergency locator transmitter.

S 712-040
(16) SATCOM System (if installed) (AMM 23-25-00/501).
(a) Do an operational test on the SATCOM system.

S 712-041
(17) Ground Crew Call System (AMM 23-43-00/501).
(a) Do an operational test of the ground crew call system.

S 712-044
(18) Flight Management Computer System (AMM 34-61-00/501).
(a) Do an operational test on the flight management computer system.

S 712-047
(19) Traffic Alert and Collision Avoidance System (TCAS) (AMM 34-45-00).
(a) Do an operational test on the TCAS System.

BATTERY ELECTROLYTE CONTAMINATION CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This procedure has these two tasks:
      (1) Lead Acid Battery Contamination
      (2) Alkaline Battery Contamination.
   B. The primary source of acid contamination is in the battery compartments.
   C. Battery electrolytes can overflow during battery charging, or leak when the battery is serviced.
   D. Contamination occurs at times and the acid must be made neutral before corrosion damage can occur.
   E. Electrolyte contamination, unless you make it neutral, can quickly corrode a metallic structure.
   F. Electrolyte can cause damage to materials such as fabrics, wood, leather, and other non-metallic materials.
      (1) Electrolyte contamination can cause discoloration on the surface it touches.

TASK 05-51-20-112-000

2. Lead Acid Battery Contamination
   A. Standard Tools and Equipment
      (1) Rubber or plastic gloves
      (2) GO2057 Goggles - Safety
      (3) Face shield
      (4) Aprons
      (5) Boots
      (6) Head gear
   B. Consumable Materials
      (1) BO0334 - Bicarbonate of Soda
      (2) BO0095 Chemical - Sodium Bicarbonate (O-S-576)
   C. Procedure

      S 942-001

      CAUTION: DO NOT GET BATTERY ELECTROLYTE (ACID) IN YOUR MOUTH, YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE BATTERY ELECTROLYTE. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU CLEAN UP THE BATTERY ELECTROLYTE CONTAMINATION. KEEP THE FUMES FROM SPARKS, FLAMES, AND TEMPERATURES ABOVE THE FLASHPOINT. BATTERY ELECTROLYTE IS A POISONOUS AND FLAMMABLE MATERIAL WHICH CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) You must do the safety steps that follow when lead acid contamination or leakage is found.
   (a) Do not let the acid leakage move to adjacent areas which will not be cleaned.
   (b) In the battery areas, protect the equipment below the batteries with plastic sheets.
   (c) Make sure the area is vented.
   (d) Use protective covers to prevent contamination of adjacent areas with acids or the solution to make the acid neutral.
   (e) You must always wear protective clothing when you clean up acid contamination.

S 112-003

(2) Do the steps that follow to clean-up the battery electrolyte contamination:
   (a) Soak up the excess fluids with a cloth.
   (b) Neutralize the contaminated area with a 20 percent sodium bicarbonate solution.

      NOTE: One pound of sodium bicarbonate mixed into one gallon of water will make the necessary solution.

   (c) Apply the solution with a cloth, mop, brush, or sponge.

      NOTE: Do not put the sodium bicarbonate solution into the battery.

      1) Make sure the solution goes into the contaminated faying surface joints.

         NOTE: A pressure application of the solution can be necessary to flush the faying surface joints and some access areas fully.

      2) Apply the solution until the bubbling of the acid/solution stops.

         NOTE: When the bubbling stops, the acid has become neutral.

         a) Let the solution stay on the surface for 5 minutes more after the bubbles stop.

   (d) Remove the solution with a mop or sponge.
      1) Discard the contaminated clean-up materials into a plastic container.

(e) Flush the area with large quantities of clean water.

NOTE: A pressure application of water to the solution can be necessary to flush the faying surface joints and some access areas fully.

1) Rub the surface with a soft brush.

(f) Do a test of the cleaned area with litmus paper.
(g) Make the area dry with clean cloths.
(h) Repair the area if it is necessary after it is fully dry.

TASK 05-51-20-112-004

3. Alkaline Battery Contamination

A. Standard Tools and Equipment
(1) Rubber or plastic gloves
(2) GO2057 Goggles - Safety
(3) Face shield
(4) Aprons
(5) Boots
(6) Head gear

B. Consumable Materials
(1) Acetic acid
(2) Household vinegar

C. Procedure

S 942-005

CAUTION: DO NOT GET BATTERY ELECTROLYTE (ACID) IN YOUR MOUTH, YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE BATTERY ELECTROLYTE. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU CLEAN UP THE BATTERY ELECTROLYTE CONTAMINATION. BATTERY ELECTROLYTE IS A POISONOUS AND CAUSTIC MATERIAL WHICH CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) You must do the safety steps that follow when alkaline contamination or leakage is found.
(a) Do not let the alkaline leakage move to adjacent areas which will not be cleaned.
(b) In the battery areas, protect the equipment below the batteries with plastic sheets.
(c) Make sure the area is vented.
(d) Use protective covers to prevent contamination of adjacent areas with alkaline, or the solution to make the alkaline neutral.
(e) You must always wear protective clothing when you clean-up alkaline contamination.

S 112-006

(2) Do the steps that follow to clean-up the battery alkaline electrolyte contamination:

(a) Soak up the excess fluids with a cloth.

(b) Neutralize the contaminated area with a 5 percent acetic acid solution.

NOTE: When acetic acid is not available, you can use household vinegar at its full strength.

(c) Apply the solution with a cloth, mop, brush, or sponge.

1) Make sure the solution goes into the contaminated faying surface joints.

NOTE: A pressure application of the solution can be necessary to flush the faying surface joints and some access areas fully.

2) Apply the solution until the chemical reaction stops.

NOTE: When the chemical reaction stops, the alkaline has become neutral.

a) Let the solution stay on the surface for 5 minutes more after the chemical reaction stops.

(d) Remove the solution with a mop or sponge.

1) Discard the contaminated clean-up materials into a plastic container.

(e) Flush the area with large quantities of clean water.

NOTE: A pressure application of water to the solution can be necessary to flush the faying surface joints and some access areas fully.

1) Rub the surface with a soft brush.

(f) Do a test of the cleaned area with litmus paper.

(g) Make the area dry with clean cloths.

(h) Repair the area if it is necessary after it is fully dry.

MERCURY SPILLAGE CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This section gives procedures to examine and clean the airplane after a mercury spill.
   B. When elemental mercury leaks on to an all metallic structure, severe structural strength degradation occurs. The rate of the diffusion of the mercury into a metal is related to the type of metal touched. The diffusion is also related to the type of finish protection the metal has. But, when the diffusion has started, it can not be stopped. Structural degradation is not always visually apparent until a load is applied to the structure.
   C. Make a record of the general quantity of the mercury spilled.
   D. Make a record of the location where the mercury was spilled.
   E. Isolate the mercury spill area to prevent contamination to other areas.
   F. The inspection/removal/repair must be made before subsequent flights.
   G. Structural repairs are necessary if there are signs of mercury contamination.
   H. Make sure that no free mercury is in the airplane. Use mercury sniffers and X-ray equipment (if available) to find free mercury.

TASK 05-51-21-212-001

2. Mercury Spillage Conditional Inspection
   A. Equipment
      (1) Medicine dropper
      (2) High capacity vacuum cleaner
      (3) Trap-type glass container
      (4) Mercury vacuum pump, Lab Safety Supply Co., P.O. Box 1368, Janesville, Wisconsin 53545
      (5) 10X hand lens
      (6) Sensing device (mercury sniffer) or equivalent
      (7) Portable X-ray equipment
   B. Consumable Materials
      (1) Corrosion preventive oil, or engine oil (Ref 20-30-03)

(2) Cardboard
(3) Paper troughs
(4) Scotch tape (Ref 20-30-07)
(5) Zinc oxide tape (Ref 20-30-07)

C. References
(1) AMM 25-52-00/601, Restraint - Baggage
(2) AMM 25-52-03/401, Insulation - Cargo Compartment
(3) AMM 53-01-01/401, Floor Panels

D. Mercury Spillage Inspection and Clean-up

S 142-002

WARNING: DO NOT GET MERCURY IN YOUR MOUTH, OR EYES, OR ON YOUR SKIN. DO NOT BREATH THE FUMES FROM THE MERCURY. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU CLEAN A MERCURY SPILL. MERCURY IS POISONOUS AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Remove all of the mercury you can see with cardboard and paper troughs. You can also use zinc oxide tape, eye droppers, or a vacuum cleaner.
(a) Vacuum the area where the mercury spillage occurred.
1) Clean a small mercury spill with trap-type glass container, or a high flow vacuum cleaner.

NOTE: Mercury fumes can cause contamination to a commercial vacuum cleaner.

2) Clean a large mercury spill with a mercury vacuum cleaner.

E. Lower Lobe (Major Zone 100) Mercury Spillage

S 822-003
(1) Remove the insulation blankets in the spill area and discard them. Also remove all of the insulation downstream of the spill to the nearest lateral fluid dams (AMM 25-52-03/401).

S 022-010
(2) Remove all of the mercury you can see with cardboard and paper troughs. You can also use zinc oxide tape, eye droppers, or a vacuum cleaner.
(a) Vacuum the area where the mercury spill occured.
1) Clean a small mercury spill with a trap-type glass container, or a high flow vacuum cleaner.

NOTE: Mercury fumes can cause contamination to a commercial vacuum cleaner.

2) Clean a large mercury spill with a mercury vacuum cleaner.

S 212-004

(3) Use a 10X magnification and examine the structure visually. Look for bare metal (scratched or chipped paint).

(a) If you think mercury has penetrated into bare metal or structural joints, those areas must be X-rayed.

NOTE: Droplets of mercury show on X-ray negatives as small white spots. Corrosion and embrittlement show as tree-like forms that penetrate the structural component.

S 902-005

(4) Replace cargo restraint equipment components that show signs of mercury contamination (AMM 25-52-00/601).

S 162-006

(5) Clean your hands, clothes, and tools with soap and hot water. Do this after the mercury spillage contamination has been removed and examination completed.

F. Main Deck (Major Zone 200) Mercury Spillage

S 212-007

(1) Examine the floor seals in the area of the spillage. (Ref 53-01-01).

(a) If floor seals are deteriorated, the floor panels must be removed and the structure examined.

S 212-008

(2) Make a visual examination of the seat track rails (and frame to floor beam components) if mercury spillage occurs near them. Use a 10X magnification hand lens to look for bare metal (scratched or chipped paint).

NOTE: A sensing device (mercury sniffer) is recommended to to find mercury deposits you can not see. This is used when the mercury spillage is identified as large. X-ray equipment (when available) can also be used to find mercury.

(a) If you think mercury has penetrated into bare metal or structural joints, those areas must be X-rayed.

NOTE: Droplets of mercury show on X-ray negatives as small white spots. Corrosion and embrittlement show as tree-like forms that penetrate the structural component.

S 162-009

(3) Clean your hands, clothes, and tools with soap and hot water. Do this after the mercury spillage contamination has been removed and examinations completed.

FIRE-RESISTANT HYDRAULIC FLUID REACTION WITH TITANIUM - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This section gives procedures to examine bare, painted, or gold coated titanium parts. The examination is necessary when the titanium touches fire resistant hydraulic fluid that has temperatures above 270° F (132° C). At these temperatures, titanium becomes brittle.

TASK 05-51-22-212-001

2. Conditional Inspection of Titanium Parts in Fire-Resistant Hydraulic Fluid Contamination Areas
   A. Consumable Materials
      (1) B00178 Solvent - Acetone
      (2) B50085 Solvent - SkyKleen 1000 BAC5750, PSD 6-80
      (3) Scrapers, wood or plastic - commercially available
   B. Examine the Titanium Parts

      NOTE: Titanium parts found in hydraulic fluid areas have a flat, black inorganic finish, or a gold coat for protection. Make sure that the black finish is not hydraulic fluid.

      S 212-002
      (1) Examine all of the titanium parts in the hydraulic fluid areas. Look for contamination, and metal or paint deterioration.

      NOTE: Titanium parts include ducts in the wheel well areas, engine fan case, and firewalls. Also included are the ducts in the aft fuselage between the pressure bulkhead and the APU firewall. Other titanium parts are some strut attach fittings and spar webs, landing gear beam, APU support structure, and stabilizer links.

      (a) Signs of hydraulic fluid contamination are a light glossy brown film, or a dull black carbonaceous residue. Also look for a bare surface on painted titanium ducts.

      S 212-003
      (2) Remove the hydraulic fluid residue. Use acetone or SkyKleen 1000 and wooden or plastic scrapers.

      S 902-004
      (3) Replace all parts that show paint deterioration and/or metal that is etched.

EXCESSIVE CABIN PRESSURE LEAKAGE - MAINTENANCE PRACTICES

1. General
   A. This procedure gives steps to do a leakage test to the airplane fuselage. This leakage test is done to make sure the fuselage pressurized areas are tight and there are no large leaks.

      NOTE: Any pressure over 4.5 psi differential needs to be coordinated with Boeing before the test is conducted.

TASK 05-51-24-782-001

2. Excessive Cabin Pressure Leakage Test
   A. Equipment
      (1) Stop watch - commercially available
      (2) Ground Cart - Able to supply 2000 cfm at 10 psi; only necessary if the APU or engine bleed air is not used
   B. References
      (1) AMM 21-00-00/201, Air Conditioning - General
      (2) AMM 21-33-01/401, Cabin Pressure Indication and Warning Module
      (3) AMM 24-22-00/201, Electrical Power Control
      (4) AMM 27-31-19/401, Elevator Feel Computer
      (5) AMM 34-11-00/501, Pitot-Static System
      (6) AMM 34-12-01/401, Air Data Computer
      (7) AMM 34-13-05/401, Standby Airspeed Indicator
      (8) AMM 34-13-06/401, Standby Altimeter
      (9) AMM 34-22-06/401, Vertical Speed Indicator
      (10) AMM 36-00-00/201, Pneumatic Power - general
      (11) AMM 49-11-00/201, Airborne Auxiliary Power
   C. Precautions

S 782-052

WARNING: OBEY ALL SAFETY STANDARDS FOR COMPRESSION AND DECOMPRESSION WHEN PERSONS ARE IN A PRESSURIZED AREA. SUDDEN PRESSURE CHANGES WILL CAUSE PAIN AND INJURY AND MUST NOT BE DONE. WHEN YOU DO NOT OBEY THE PRECAUTIONS, INJURY TO PERSONS WILL OCCUR.

(1) If personnel are in the airplane during a test, they must be in good physical condition. If any person experiences pain during pressure change, you must lower the rate of change of pressure or make the absolute pressure stable immediately until the person can either make the pressure equal in their ears, or be removed from the airplane.

NOTE: The ability to adjust to increasing or decreasing pressure is an individual characteristic, and one which varies from day to day depending upon a person's health. People with sinus or ear problems should not be exposed to pressure changes. Similarly a person experiencing headache, toothache, head cold, hay fever, etc., should be excluded from airplane during test. Individuals subjected to pressure changes should be trained in techniques for venting the ears.

S 782-063

(2) This test uses the airplane equipment to pressurize the airplane and monitor the procedure.

NOTE: A method to calculate absolute pressure is as follows: Determine the field atmospheric pressure (in inches of mercury). Divide field atmospheric pressure by 2.036 and add the result to the gauge pressure or differential pressure inside the cabin to give the absolute pressure (PSIA). For example: If the field atmospheric pressure is 29.86 inHG and the cabin differential pressure is 4.0 psid, divide 29.86 by 2.036 which equal 14.67 psi. Add the cabin differential pressure (in psi) to the field pressure (4.0 psid + 14.67 psi = 18.67 psia) to obtain an absolute pressure of 18.67 psi.

(a) The primary pressure source is the APU. You can also use the engine bleed air, or an external ground source.

NOTE: The external ground source must supply 2000 cfm of air at 10 psig.

S 782-060

(3) Figure 201 shows how to obtain a correction factor used in connection with some test data. Figure 202 shows the curves for acceptable airplane leakage rates.

S 782-061

(4) Many small leakage areas can add to create an excessive fuselage leakage rate. Therefore, it is recommended that all sources of leakage be repaired.

S 782-062

(5) If leakage is found during this inspection, go to the related maintenance manual section for the repair.

D. Prepare for the Test

S 792-022

(1) Make sure the pitot-static system is fully installed and operational (AMM 34-11-00/201).

S 862-025

(2) Supply electrical power (AMM 24-22-00/201).

S 862-026

(3) Move the EQUIP COOLING selector on the pilots overhead control panel, P5, to the STBY position.

S 942-029

(4) Open all of the internal compartment doors.

S 862-030

(5) Make sure that all these circuit breakers on the panel, P11, are closed:
(a) 11B14, CABIN ALTITUDE CONTROL MANUAL
(b) 11B15, CABIN ALTITUDE CONTROL SELECT
(c) 11B13, CABIN ALTIMETER

S 862-050

WARNING: OBEY ALL SAFETY STANDARDS FOR COMPRESSION AND DECOMPRESSION WHEN PERSONS ARE IN A PRESSURIZED AREA. SUDDEN PRESSURE CHANGES WILL CAUSE PAIN AND INJURY AND MUST NOT BE DONE. WHEN YOU DO NOT OBEY THE PRECAUTIONS, INJURY TO PERSONS WILL OCCUR.

(6) Make sure only the necessary persons are in the airplane. All persons who are in the airplane when the pressure is increased must be in good physical condition.

S 862-051

(7) When a person feels pain during a pressure change, you must lower the pressure or make it stable immediately. Do this to make sure the person can make the pressure equal in their ears.

NOTE: Also, lower the pressure to remove the person from the airplane.

S 862-032

(8) Make sure all of the external hatches and doors that must hold pressure are tightly closed.

S 862-059

(9) Move the cabin pressure mode selector, on the P5 panel, to MAN.

E. Procedure

S 792-033

(1) Do the Leakage Test.

(a) Start the APU and use it as a pressure source (AMM 49-11-00/201).

NOTE: If you use a ground cart to supply pneumatic power, it must supply 2000 cfm of air at 10 psi (AMM 36-00-00/201).

(b) Start the air conditioning packs (AMM 21-00-00/201).

(c) After the air conditioning system is stable, move the CABIN ALTITUDE MANUAL selector on the panel, P5, to DESCEND.

NOTE: This will permit an increase in the cabin pressure.

WARNING: DO NOT INCREASE PRESSURE MORE THAN 2000 FEET A MINUTE. WHEN YOU INCREASE THE PRESSURE MORE THAN 2000 FEET A MINUTE, DAMAGE TO THE AIRPLANE STRUCTURE OR INJURY TO PERSONS CAN OCCUR.

(d) Slowly increase the cabin pressure at a rate of approximately 300 feet a minute. Increase the cabin pressure until the cabin differential pressure indicator on the panel, P5, shows a differential pressure of 4.0 psi.

NOTE: The rate of cabin pressurization can be more than 300 feet a minute, when you obey the last WARNING.

NOTE: The increase in pressure can cause the lav or galley smoke detectors to sound an alarm when there is no smoke.

S 862-076

(2) You must do the steps that follow quickly to hold the cabin pressurization:

(a) Turn the L and R pack control selectors on the panel, P5, to OFF.

(b) You must close the outflow valve immediately after you turn off the air conditioning packs.

1) Move and hold the CABIN ALTITUDE MANUAL selector on the panel, P5, to DESCEND. Do this until the outflow valve indicator shows that it is fully closed.

NOTE: This will make sure the outflow valve is fully closed for the test.

(c) In less than 5 minutes after you turn off the air conditioning pack, make a record of the data. Make five to ten data sets of each of the items that follow:

NOTE: If the outflow valve did not stay fully closed during the leakage test, the pressure/time data is not correct.

1) Use the stopwatch to track the time.

2) Use the Cabin Differential Pressure gauge located on the P5 panel to measure the cabin differential pressure.

(d) Record the cabin temperature.

(e) Record the external ambient temperature and pressure.

S 842-035

(3) Do the APU shutdown procedure (or the alternate pressure source) (AMM 49-11-00/201).

S 972-036

(4) Continue to record the differential pressure and time until the cabin pressure is the same as the ambient pressure.

S 942-037

(5) Open the external doors and hatches when it is necessary.

S 972-038
(6) Do the Leakage Rate Analysis.
(a) Get the correction factor from Figure 201 to correct the time data. Do this if the test was done at field altitudes that are much higher than at the sea level.
(b) Put the data on a graph equivalent to the one in Figure 202 and Figure 202A. Compare your graph to the graph in Figure 202 and Figure 202A. If your data points are above the curve in Figure 202 and Figure 202A, then the leakage rate is satisfactory.

F. Put the Airplane Back to Its Usual Condition.

S 782-065
(1) Do a check of the Pitot Static system for leaks and correct operation if it is necessary (AMM 34-11-00/501).

S 412-041
(2) If you removed airplane equipment to do this test, use the applicable maintenance manual chapters to install it.

S 942-066
(3) Open the outflow valve.

S 862-067
(4) Move the EQUIP COOLING selector on the pilots overhead control panel, P5, to the AUTO position.

S 862-068
(5) Move the cabin pressure mode selector to AUTO position.

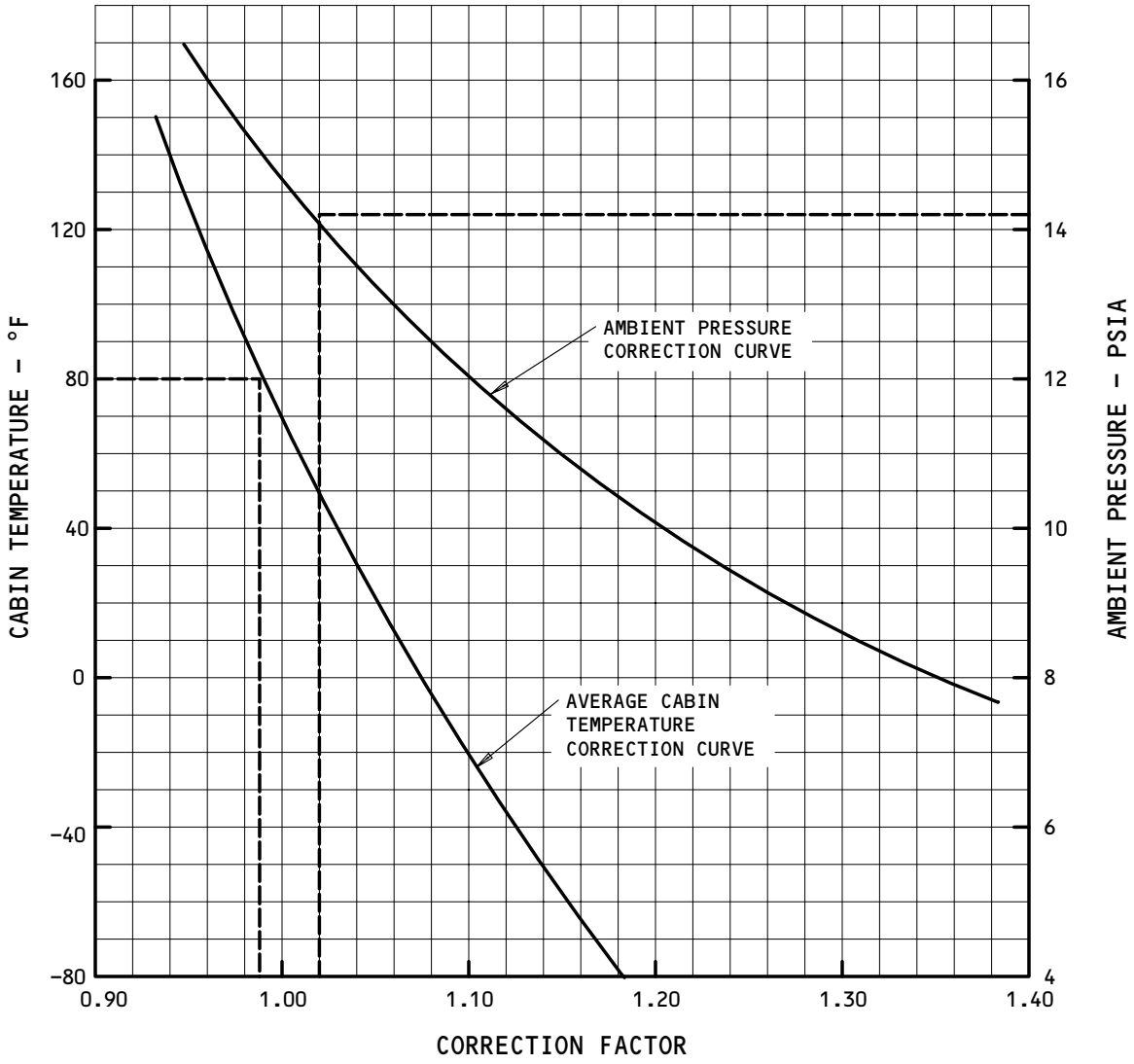
S 412-069
(6) If the crew oxygen diluter demand masks was removed, then install and test the oxygen equipment (AMM 35-11-51/401).

S 862-042
(7) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

HOW TO USE THE CURVE:

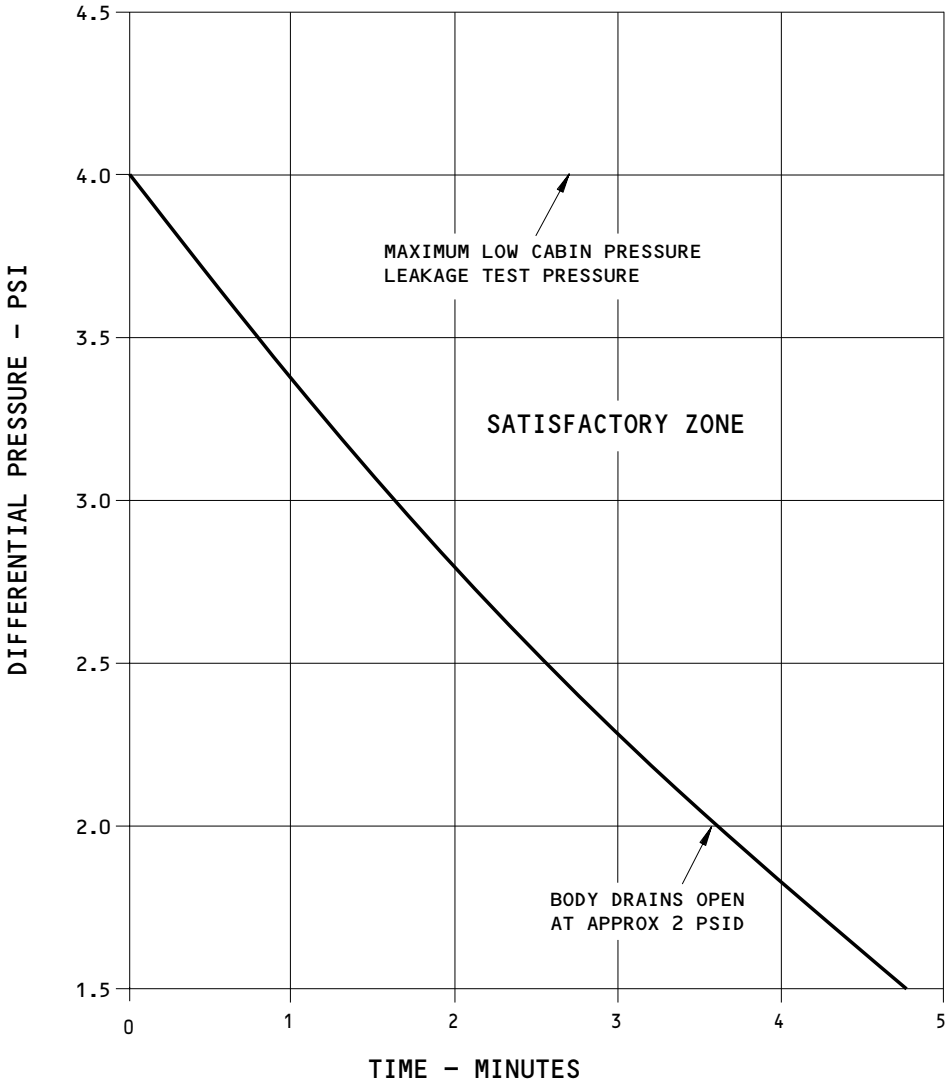
EXAMPLE: (A) ASSUME AN AVERAGE CABIN TEMPERATURE OF 80°F, AN AMBIENT PRESSURE OF 14.15 PSIA, AND THE TIME IS THREE MINUTES.

(B) FROM THE CURVES BELOW: THE TEMPERATURE CORRECTION FACTOR IS 0.99, AND THE PRESSURE CORRECTION FACTOR IS 1.02. THE PRODUCT OF THE TWO FACTORS IS 1.01. THUS, THE TIME CORRECTED FOR AN INITIAL AMBIENT PRESSURE OF 14.7 PSIA AN AVERAGE CABIN TEMPERATURE OF 70°F, AND AN 8.6 PSIG DIFFERENTIAL = 3/1.01 = 2.97 = 2 MINUTES, 58 SECONDS.



THE CORRECTION FACTOR IS TO BE APPLIED TO THE BLEED DOWN TIME WHEN THE AMBIENT PRESSURE DOES NOT EQUAL 14.7 PSIA AND/OR THE CABIN TEMPERATURE DOES NOT EQUAL 70°F.

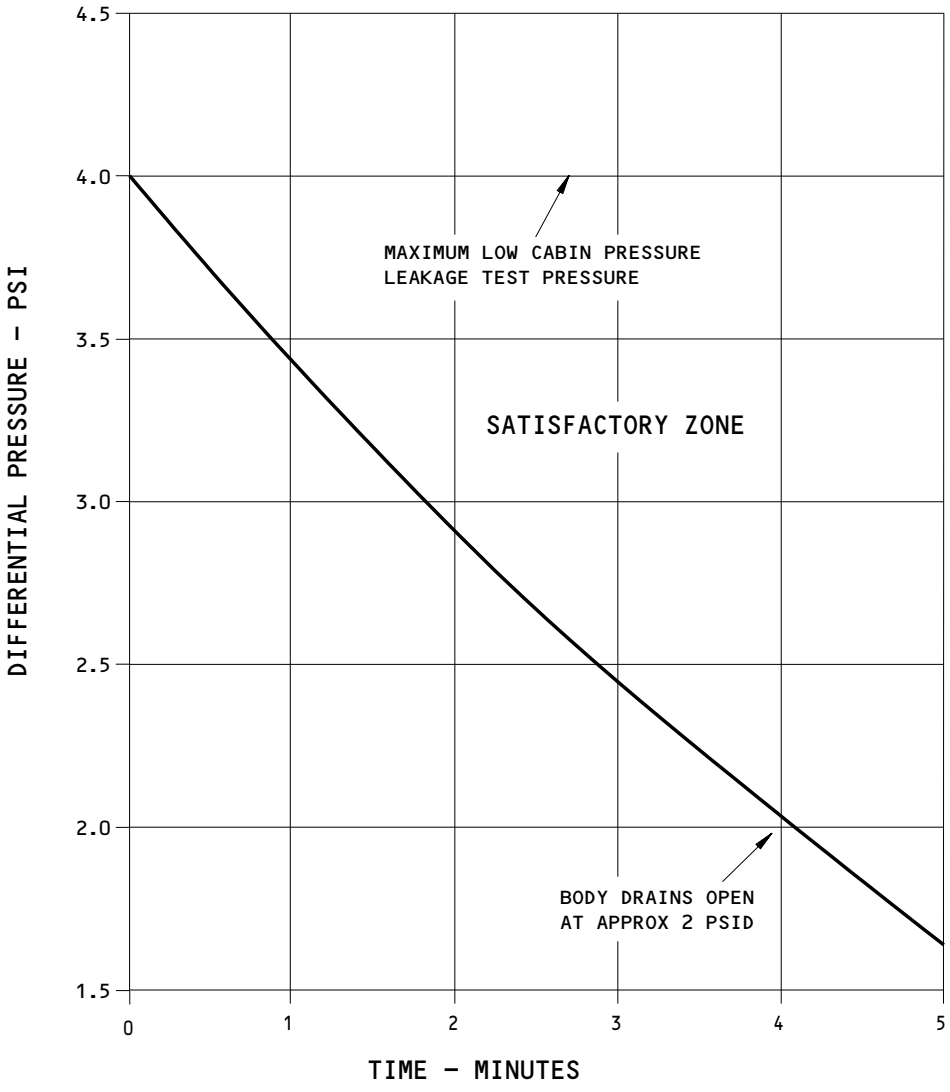
Pressure Leakage Test Correction Factor
Figure 201



767-200

Cabin Pressure Leakage Rate Chart
Figure 202

M24342



767-300

Cabin Pressure Leakage Rate Chart
Figure 202A

M24318

CONDITIONED AIR PACK OUTLET DUCT SYSTEM FAILURE - MAINTENANCE PRACTICES

1. General

A. This procedure contains the task to examine the cabin air supply check valve after an upstream duct failure.

(1) The cabin air supply check valve can be damaged when there is an upstream duct failure of the pack outlet.

(2) When there is a duct failure, the applicable cabin air supply check valve must be removed and inspected.

(3) There is one cabin air supply check valve found downstream of each air cooling pack, near the forward bulkhead of the ECS bay.

TASK 05-51-25-212-001

2. Cabin Air Supply Check Valve Conditional Inspection

A. References

(1) AMM 21-51-15/401, Cabin Air Supply Check Valve

(2) AMM 21-51-15/601, Cabin Air Supply Check Valve

B. Access

(1) Location Zones

135 Environmental control systems (ECS) bay (left)

136 Environmental control systems (ECS) bay (right)

(2) Access Panels

193FL Fairing Panel (left)

194FR Fairing Panel (right)

193GL Pressure Relief Panel (left)

194HR Pressure Relief Panel (right)

193NL ECS access doors (left)

194LR ECS access doors (right)

C. Procedure

S 022-002

(1) Remove the cabin air supply check valve for inspection (AMM 21-51-15/401).

S 212-003

(2) Do a visual inspection of the cabin air supply check valve (AMM 21-51-15/601).

NOTE: If there is damage to the valve, the valve must be replaced.

(a) Look for:

- missing parts
- cracks
- corrosion
- flapper deformation
- restricted flapper movement.

S 422-004

(3) Install the cabin air supply check valve (AMM 21-51-15/401).

S 842-005

(4) Put the airplane back to its usual condition.

EXTREME DUST CONDITION - MAINTENANCE PRACTICES

1. General
   A. This section gives procedures to examine the dust sensitive areas on the airplane when there are extreme dust conditions.

TASK 05-51-27-212-001

2. Extreme Dust Conditional Inspection
   A. Procedure

S 212-002

(1) Make sure the areas that follow are clean:
   (a) Stabilizer trim and flap screw mechanisms.
   (b) Static ports and pitot tubes.
   (c) Landing gear shock strut inner cylinders and all gear actuator pushrods. This includes the main gear uplock actuator pushrods.
   (d) Engine inlet and indicator probes.

ICE OR SNOW CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This section gives procedures to examine the airplane surface before a flight when there are ice or snow conditions.

TASK 05-51-28-212-001

2. Ice or Snow Conditional Inspection
   A. References
      (1) AMM 12-33-01/301, Cold Weather Maintenance
   B. Procedures

S 212-002

(1) When there are ice or snow conditions, examine the areas that follow before the airplane flight.
   (a) Look at the fuselage, wings, control surfaces, movable seals and hinge points for ice or snow.
   (b) Look at the engine inlet cowl for ice and snow. Also make sure the inlet doors move freely, and the first stage compressor turns freely.

S 662-003

(2) If there is ice or snow, do the cold weather maintenance service (AMM 12-33-01/301).

EXCEEDING MAXIMUM NOSE LANDING GEAR TOWING ANGLE OR MAXIMUM TOWING LOAD (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

1. General
   A. The following procedure is required for an accidental turn of the nose landing gear greater than the maximum steering angle with torsion links attached, steering from the flight deck with the towbar installed and the steering system activated, or towing more than the maximum towing loads.

      NOTE: Exceeding maximum steering angle with torsion links attached is also known as an oversteer.

   B. This inspection procedure is divided into two phases (Phase I and Phase II).
      (1) If the inspection during Phase I does not shown that damage has occurred, no more inspections are necessary.
      (2) If the Phase I inspection shows that damage has occurred, the Phase II inspection must be done.
      (3) The Phase I inspection must be completed prior to the Phase II inspection.
   C. When the conditional inspection tells you to "examine" a component, look for these conditions (replace or repair components, if it is necessary).
      (1) Cracks
      (2) Pulled apart structure
      (3) Loose paint (paint flakes)
      (4) Twisted parts (distortion)
      (5) Bent components
      (6) Fasteners holes that become larger or longer
      (7) Loose fasteners
      (8) Fasteners that have pulled out or are gone
      (9) Delaminations
      (10) Misalignment
      (11) Interference
      (12) Hydraulic fluid leakage
      (13) Other signs of damage

   TASK 05-51-29-202-001

2. Phase I Inspection
   A. References
      (1) AMM 09-11-00/201, Tow the Airplane
      (2) AMM 32-00-25/201, Landing Gear Control Cables
      (3) AMM 32-45-03/601, Wheels Fast Check (Wheel Installed on the Airplane)
      (4) AMM 32-45-03/601, Wheels Inspection (Wheel Removed from the Airplane)
      (5) AMM 32-45-04/601, Tires Inspection

(6) AMM 32-51-00/501 Nose Wheel Steering System.

B. Access

(1) Location Zone

700 Landing Gear and Landing Gear Doors

C. Nose Landing Gear Area, Exceeding Maximum Steering Angle

NOTE: Refer to Towing, AMM 09-11-00/201.

S 202-002

(1) Examine the nose landing gear areas that follow:

(a) The tires, do this task: Tires Inspection (AMM 32-45-04/601).

(b) The wheels, do this task: Wheels Fast Check (Wheel Installed on the Airplane) (AMM 32-45-03/601).

1) If the examination finds any wheels damaged, do this task: Wheels Inspection (Wheel Removed from the Airplane) (AMM 32-45-03/601).

(c) If damage occurred during towbarless towing, do these steps:

1) Verify the axle is not bent or deformed.

2) Examine the axle threads for excessive damage.

(d) Make sure all of the fasteners are installed in the correct positions on the nose landing gear and the nose wheel well.

(e) Examine the steering cable control system for signs of cable overload, do these tasks:
Landing Gear Control Cables - Location and Part Data (AMM 32-00-25/201),

1) Verify the cable pulley brackets are not deformed.

2) Verify the proper cable rigging.

(f) Examine the nose gear steering actuator rods for signs of necking, hydraulic leakage, or contact with the steering collar.

1) Verify the actuator rods are not bent or deformed.

(g) Examine the actuator rod end attachments to the steering collar for signs of deformation and excessive freeplay.

(h) If damage occurred during towbarless towing examine the following pins for signs of crank shafting, cracks or any other gross defects:
1) Torsion Link Pin, upper
2) Torsion Link Pin, lower
3) Torsion Link QD Plungers
4) Steering Collar Pins

(i) Examine the actuator trunnion attachments to the steering plates for signs of deformation and excessive freeplay.

(j) Examine the upper and lower ends of the shock strut of the nose gear for fluid leakage.

(k) Examine the outer cylinder of the nose landing gear.

(l) Examine the nose landing gear trunnions for signs of damage.

(m) Examine the nose landing gear inner cylinder at tow fitting attach points.

(n) Examine the nose gear torque links for signs of deformation and excessive freeplay.

(o) Examine the nose landing gear inner cylinder torque link attach lugs.

(p) Examine the nose landing gear trunnion attachment areas for signs of damage.

(q) Examine the doors, hinges and retraction mechanism of the nose landing gear for signs of damage.

(r) Operationally check the steering system by commanding slow tiller inputs in both directions.
1) Verify no system binding occurs and there is no leakage from steering actuator rod seals.
2) Examine the nose landing gear steering angle, AMM 32-51-00/501.

TASK 05-51-29-202-003

3. Phase II Inspection

A. References

(1) AMM 12-15-02/301, Nose Landing Gear Shock Strut Servicing

(2) AMM 32-21-11/601, Nose Landing Gear Torsion Link Connection

(3) AMM 32-34-00/501, Nose Landing Gear Extension and Retraction System - Functional Test (Airplane on the Jacks)

(4) AMM 32-51-00/501, Nose Landing Gear Steering System - Functional Test

(5) AMM 32-51-03/401, Nose Landing Gear Steering Actuator Removal

B. Access

(1) Location Zone

700 Landing Gear and Landing Gear Doors

C. Nose Landing Gear Operational Check

S 712-004

(1) Retract and then extend the nose landing gear with the normal system to make sure it operates correctly.
  (a) Do this task: Nose Landing Gear Extension and Retraction System - Functional Test (Airplane on the Jacks) (AMM 32-34-00/501).

D. Nose Landing Gear Inspections

S 202-005

(1) Examine the nose landing gear areas that follow:
  (a) Nose Landing Gear Torsional Freeplay Inspection, do this task: Nose Landing Gear Torsion Link Connection (AMM 32-21-11/201).
  (b) Examine the shock strut of the nose landing gear to make sure the pressure is satisfactory.
    1) Do this task: Nose Landing Gear Shock Strut Servicing (AMM 12-15-02/301).
  (c) If there is damage to the nose landing gear, do these steps:
  (d) Remove the inner cylinder if:
    1) There is visible damage of any of the following structural components:
      a) Nose landing gear inner cylinder
      b) Nose landing gear outer cylinder
      c) Drag strut
    2) There are signs of a shock strut fluid leak.
    3) It is known that the maximum towing load has been exceeded.
  (e) If you remove the inner cylinder, examine the inner cylinder as follows:
    1) Perform a visual examination looking for distortion and cracks.
    2) Do a dimensional inspection.
    3) Do an NDT inspection, if appropriate.
  (f) Make sure there are no loose fasteners in the web of the nose wheel well near the trunnion support fittings.
    1) Remove the inner cylinder and examine it for distortion and cracks.
  (g) Do a check of the rigging of the steering mechanism.
    1) Do this task: Nose Landing Gear Steering System - Functional Test (AMM 32-51-00/501).
  (h) Do a check of the steering system:
    1) Do this task: Nose Landing Gear Steering System - Functional Test (AMM 32-51-00/501).
    2) Remove and examine the actuators, do this task: Nose Landing Gear Steering Actuator Removal (AMM 32-51-03/401).
    3) Examine the attach pins.
    4) Examine the steering plate.

VOLCANIC ASH CONDITION (CONDITIONAL INSPECTION) - MAINTENANCE PRACTICES

TASK 05-51-31-212-001

1. Volcanic Ash Conditional Inspection

A. General

(1) Flight crew reports of electrostatic discharge across the windshields are indications of a volcanic ash condition. Other indications are a bright glow in the engine inlets along with subsequent engine shutdown. Also, a possible limited view through the windshields and windows can occur.

(2) Volcanic ash is a highly abrasive material that is usually found to be noncorrosive. But, because volcanic ash is very abrasive, finished surfaces open to volcanic ash can result in a corrosive condition.

(3) The texture is almost the same as talcum powder. The dimensions of most ash particles are less than 5 microns with trace amounts that are more than 50 microns. Volcanic ash is very abrasive so be careful when you wash the airplane. You can cause damage to the airplane if you rub the surface too hard.

(4) Volcanic ash incidents that have occured to engines have shown that the ash will change conditions. As the ash goes through the combustor, it will change to between a plastic flow and molten condition. In this condition, it will have very high adhesive qualities and properties. The ash will bond to the nozzle guide vanes of the high pressure turbine. It will also bond to the rotor blades of the high pressure turbine. When the ash bonds to these components, it causes a decrease in the turbine flow area. It also causes a decrease of nozzle guide vane and turbine blade cooling air.

B. References

(1) AMM 12-11-03/301, Fuel Sump - Draining

(2) AMM 12-14-01/301, Potable Water System - Draining

(3) AMM 21-25-01/401, Cabin Air Recirculation Air Fan

(4) AMM 21-25-02/401, Recirculation Air Filter

(5) AMM 21-25-03/401, Recirculation Air Check Valve
(6) AMM 21-31-03/201, Cabin Pressure Outflow Valve
(7) AMM 21-31-04/401, Cabin Pressure Outflow Valve Actuator
(8) AMM 21-32-01/501, Positive Pressure Relief Valve
(9) AMM 21-32-02/401, Positive Pressure Relief Valve Filter
(10) AMM 21-51-01/401, Flow Control and Shutoff Valve
(11) AMM 21-51-02/401, Heat Exchangers
(12) AMM 21-51-02/601, Heat Exchangers
(13) AMM 21-51-03/401, Air Cycle Machine (ACM)
(14) AMM 21-51-04/401, Water Extractor
(15) AMM 21-51-11/201, Pack Low Limit Control Valve
(16) AMM 21-51-12/401, Pack Temperature Control Valve
(17) AMM 21-51-15/401, Cabin Air Supply Check Valve
(18) AMM 21-51-15/601, Cabin Air Supply Check Valve
(19) AMM 21-51-21/401, Secondary Water Extractor
(20) AMM 21-53-01/401, Ram Air Inlet Door
(21) AMM 21-53-02/401, Ram Air Exhaust Door
(22) AMM 21-53-03/401, Ram Air Inlet Door Actuator
(23) AMM 21-53-04/401, Ram Air Exhaust Door Actuator
(24) AMM 21-58-00/001, Equipment Cooling System
(25) AMM 21-58-05/401, Overboard Exhaust Valve
(26) AMM 21-58-19/201, E/E Equipment Cooling Smoke Detector
(27) AMM 21-61-05/401, Trim Air Supply Check Valve
(28) AMM 21-61-06/401, Trim Air Pressure Regulating Valve
(29) AMM 21-61-07/401, Trim Air Modulating Valve
(30) AMM 24-11-01/401, Integrated Drive Generator
(31) AMM 26-16-01/201, Cargo Smoke Detectors
(32) AMM 26-16-02/401, Smoke Detector Blowers
(33) AMM 26-20-00/001, Extinguishing
(34) AMM 27-00-00/001, Flight Controls
(35) AMM 28-11-03/401, Surge Tank Access Door
(36) AMM 29-11-23/401, Reservoir Sampling Valve
(37) AMM 30-11-02/401, Wing Thermal Anti-Ice Valve
(38) AMM 30-21-03/401, Engine Inlet Thermal Anti-Ice Valve
(39) AMM 30-81-01/401, Ice Detector Probe

(40) AMM 34-11-01/401, Pitot-Static Probes
(41) AMM 34-11-03/401, Static Probe Port
(42) AMM 34-12-02/401, Total Air Temperature Probe
(43) AMM 34-12-03/401, Angle-of-Attack Sensor
(44) AMM 36-11-04/401, Isolation Valve
(45) AMM 36-11-06/401, Air Supply Intermediate Pressure Check Valve
(46) AMM 36-11-07/401, High Pressure Shutoff Valve
(47) AMM 36-11-09/501, Air Supply Pressure Regulating and Shutoff Valve
(48) AMM 36-11-10/401, APU Shutoff Valve
(49) AMM 36-11-11/401, APU Air Supply Check Valve
(50) AMM 36-11-15/601, Air Supply Precooler
(51) AMM 36-11-16/401, Fan Air Modulating Valve
(52) AMM 36-21-00/501, Air Supply Pressure Indicating Systems
(53) AMM 38-14-01/401, Water Quantity Transmitter
(54) AMM 38-15-01/401, Compressor - Potable Water Tank
(55) AMM 38-15-02/401, Air Filter
(56) AMM 38-15-03/401, Air Filter - Compressor Inlet
(57) AMM 49-15-03/601, Air Intake Plenum (APU)
(58) AMM 49-15-05/401, APU Air Intake Door
(59) AMM 49-15-06/401, APU Air Intake Door Actuator
(60) AMM 49-21-00/601, APU Engine (Borescope)
(61) AMM 49-27-03/601, Oil Pressure and Scavenge Filter Elements
(62) AMM 49-27-04/601, Magnetic Chip Detectors and Drain Plug
(63) AMM 49-31-04/401, Fuel Filter Element
(64) AMM 49-31-08/201, Fuel Divider Filter Element
(65) AMM 49-53-01/401, Surge Valve
(66) AMM 49-81-01/601, APU Exhaust Duct
(67) FIM 71-05-00, Engine - General
(68) AMM 73-11-02/401, Element - Fuel Filter

C. Precautions

S 212-128

(1) Volcanic ash will stay on bare lubricated surfaces. It can penetrate many conventional seals, go into the engine gas path or go into the air condition system. It is possible for the ash to go into other opening on the airplane. Bare lubricated surfaces that are known to be contaminated with volcanic ash must be cleaned and relubricated. Do this as soon as possible to prevent unusual wear to the parts that move. Some of these parts are the inner cylinders of the landing gear shock strut, and hydraulic actuator rods. Also there are stabilizer trim and flap screw mechanisms. You must monitor parts that rotate or slide for signs of ash related damage. This procedure must be done as a follow-on program if initial damage was not found.

S 212-126

(2) Do this conditional inspection if one or more of the conditions that follow occur:

(a) An airplane's flight path went through a cloud of volcanic ash.

CAUTION: OPERATE THE EQUIPMENT COOLING SYSTEM IN A STANDBY MODE ONLY DURING GROUND OPERATIONS IN VOLCANIC ASH FALLOUT CONDITIONS. THIS WILL MAKE SURE THAT ALL E/E COOLING VALVES THAT ARE FLUSH WITH THE OUTER SKIN ARE CLOSED. WITH THESE VALVES CLOSED, VOLCANIC ASH CAN NOT ENTER THE SYSTEM.

(b) An airplane is covered with volcanic ash during ground operations (towing, taxiing, parking, etc.) during volcanic ash fallout conditions.

(c) An airplane does a landing or takeoff during volcanic ash fallout conditions.

S 212-127

WARNING: DO NOT BREATH VOLCANIC ASH. DO NOT GET VOLCANIC ASH IN YOUR EYES. PUT ON PROTECTIVE CLOTHES, EYE GOGGLES, AND A RESPIRATOR MASK THAT IS SUFFICIENT TO FILTER VOLCANIC ASH PARTICLES. VOLCANIC ASH CAN CAUSE EYE IRRITATION AND INJURY TO THE RESPIRATORY SYSTEM.

(3) Volcanic ash can cause discomfort to persons during fallout conditions. Precautions must be followed when you work in a volcanic ash environment. This will prevent the entry of volcanic ash into the eyes and respiratory system.

D. Airplane Leading Edge External Surfaces

S 212-002

(1) Examine the airplane and look for abrasions. Look at the areas that follow:

(a) Front of the fuselage (this includes the weather radome).

(b) Engine nacelles

(c) Vertical Stabilizer

(d) Wing

1) Examine the leading edge of the wing for dents. Also refer to the Structural Repair Manual to make sure the skin is at the correct thickness.

(e) Windshield and Windows

1) Look for abrasion damage that limits vision.

E. Engines

S 212-003

(1) Examine the engines to find if the volcanic ash ingestion caused damage (FIM 71-05-00).

S 422-119
(2) Replace the left and right engine fuel filter elements at the specified hour intervals after a volcanic ash encounter (AMM 73-11-02/401).

F. Probes and Sensors

S 212-004
(1) Examine the Pitot-Static Probes to see if volcanic ash has collected or has caused blockage (AMM 34-11-01/401).

S 212-005
(2) 767-200/300 AIRPLANES;
Examine the Angle-of-Attack Sensors to see if volcanic ash has collected or has caused blockage (AMM 34-12-03/401).

S 212-114
(3) Examine the Flush Static Probe Ports to see if volcanic ash has collected or caused blockage (AMM 34-11-03/401).

S 212-007
(4) 767-200/300 AIRPLANES;
Examine the Total Air Temperature Probe(s) to see if volcanic ash has collected or caused blockage (AMM 34-12-02/401).

S 212-008
(5) Examine the Ice Detector Probe to see if volcanic ash has collected or caused blockage (AMM 30-81-01/401).

G. Air Condition System Examination

S 212-009
(1) Examine the Ram Air Inlet Doors. If volcanic ash is found, clean the doors, bearings, and movable joints, as necessary (AMM 21-53-01/401).

S 212-010
(2) 767-200/300 AIRPLANES;
Examine the Ram Air Exhaust Doors. If volcanic ash is found, clean the doors, bearings, and movable joints as necessary (AMM 21-53-02/401).

S 212-016
(3) Examine the E/E cooling Overboard Exhaust Valve. Look for signs of volcanic ash on the external surface (AMM 21-58-05/401).

S 212-017
(4) Examine the Ground Supply Valve. Look for signs of volcanic ash on the external surface (AMM 21-58-04/401).

S 212-018
(5) If volcanic ash is found on the external surface of the valves that follow, remove the ash:
(a) E/E cooling Overboard Exhaust Valve
(b) Ground Supply Valve.

S 212-019
(6) If the valves that follow were open during a volcanic ash fallout, clean the total Equipment Cooling System (AMM 21-58-00/001).
(a) E/E cooling Overboard Exhaust Valve.
(b) Ground Supply Valve.

S 022-020
(7) Remove cleaning door from the bottom of the primary/secondary heat exchanger. If ash is found, remove the primary/secondary heat exchangers (AMM 21-51-02/401).

S 162-021
(8) Clean the primary and secondary heat exchangers as necessary (AMM 21-51-02/601).

S 022-022
(9) Remove the primary Water Extractor for examination (AMM 21-51-04/401).

S 162-023
(10) If volcanic ash is found in the water extractor, clean the Primary Water Extractor as necessary (AMM 21-51-04/401).

S 022-024
(11) Remove the Secondary Water Extractor for examination (AMM 21-51-21/401).

S 162-025
(12) If volcanic ash is found in the water extractor, clean the Secondary Water Extractor as necessary (AMM 21-51-21/401).

S 022-026
(13) Remove the pack Flow Control and Shutoff Valves for examination (AMM 21-51-01/401).

S 212-027
(14) Examine the pack Flow Control and Shutoff Valves for signs of volcanic ash (AMM 21-51-01/401).

S 022-028
(15) Remove the pack Heat Exchangers for examination (AMM 21-51-02/401).

S 212-029
(16) Examine the pack Heat Exchangers for signs of volcanic ash (AMM 21-51-02/601).

S 022-030
(17) Remove the Recirculating Air Fans for examination (AMM 21-25-01/401).

S 022-031
(18) Examine the Recirculating Air Fans for signs of volcanic ash (AMM 21-25-01/401).

S 212-032
(19) Examine the Recirculation Air Filters for volcanic ash (AMM 21-25-02/401).

S 022-033
(20) Remove the Cabin Pressure Outflow Valve for examination (AMM 21-31-03/201).

S 212-034
(21) Examine the Cabin Pressure Outflow Valve for volcanic ash (AMM 21-31-03/201).

S 022-035
(22) Remove the actuator for the Cabin Pressure Outflow Valve for examination (AMM 21-31-04/401).

S 212-036
(23) Examine the actuator for the Cabin Pressure Outflow Valve for volcanic ash (AMM 21-31-04/401).

S 022-108
(24) Remove the Cabin Air Supply Check Valves for examination (AMM 21-51-15/401).

S 212-109
(25) Examine the Cabin Air Supply Check Valves for volcanic ash (AMM 21-51-15/601).

S 212-110
(26) Examine the Overboard Exhaust Valve for volcanic ash. If the valve was closed, remove the volcanic ash from the external surface (AMM 21-58-05/401).

S 022-111
(27) If the Overboard Exhaust Valve was open, remove the valve (AMM 21-58-05/401).

S 022-112
(28) Remove the Positive Pressure Relief Valve for examination (AMM 21-33-01/401).

S 212-037
(29) Examine the Positive Pressure Relief Valve for volcanic ash (AMM 21-32-01/501).

S 022-038
(30) Remove the Positive Pressure Relief Valve Filter for examination (AMM 21-32-02/401).

S 212-039
(31) Examine the Positive Pressure Relief Valve Filter for volcanic ash (AMM 21-32-02/401).

S 022-040
(32) Remove the Pack Low Limit Control Valves for examination (AMM 21-51-11/201).

S 212-041
(33) Examine the Pack Low Limit Control Valves for volcanic ash (AMM 21-51-11/201).

S 022-042
(34) Remove the Pack Temperature Control Valves for examination (AMM 21-51-12/401).

S 212-043
(35) Examine the Pack Temperature Control Valves for volcanic ash (AMM 21-51-12/401).

S 022-044
(36) Remove, if installed, the Trim Air Supply Check Valves for examination. This step is optional to the airline if it is found necessary to clean the total Equipment Cooling System. But, this step could prevent a possible shorter component service life (AMM 21-61-05/401).

S 022-045
(37) Remove, if installed, the Trim Air Pressure Regulating Valve for examination. This step is optional to the airline if it is found necessary to clean the total Equipment Cooling system. But, this step could prevent a possible shorter component service life (AMM 21-61-06/401).

S 022-046
(38) Remove the Trim Air Modulating Valves for examination. This step is optional to the airline if it is found necessary to clean the total Equipment Cooling System. But, this step could prevent a possible shorter component service life (AMM 21-61-07/401).

S 022-047
(39) Remove the Air Cycle Machine (ACM) for examination. This step is optional to the airline if it is found necessary to clean the total Equipment Cooling System. But, this step could prevent a possible shorter component service life (AMM 21-51-03/401).

S 212-048
(40) Examine the Ram Air Inlet Door Actuators for volcanic ash (AMM 21-53-03/401).

S 212-049
(41) Examine the Ram Air Exhaust Door Actuators for volcanic ash (AMM 21-53-04/401).

H. Pneumatic System Examination

S 212-050
(1) Examine the Air Supply Precoolers. If signs of volcanic ash are found, remove the precooler (AMM 36-11-15/601).

S 212-051
(2) Examine the High Pressure Shutoff Valve. If signs of volcanic ash are found, remove the shutoff valve (AMM 36-11-07/501 and AMM 36-11-07/401).

S 212-052
(3) Examine the Air Supply Immediate Pressure Shutoff Valve. If signs of volcanic ash are found, remove the shutoff valve (AMM 36-11-06/401).

S 212-053
(4) Examine the Fan Air Modulating Valve. If signs of volcanic ash are found, remove the modulating valve (AMM 36-11-16/401).

NOTE: Look in the outlet side of the components in the last four steps (Air Supply Precoolers, High Pressure Shutoff Valve, Air Supply Immediate Pressure Shutoff Valve, and the Fan Air Modulating Valve). If there is no volcanic ash found, the procedure to examine the Pneumatic System is complete. The remaining pneumatic system steps are not necessary.

S 022-054
(5) Remove, if installed, the Air Supply Pressure Regulating and Shutoff Valve to be examined (AMM 36-11-09/501).

S 212-055
(6) Examine, if installed, the Air Supply Pressure Regulating and Shutoff Valve for volcanic ash (AMM 36-11-09/501).

S 022-056
(7) Remove the Isolation Valve to be examined (AMM 36-11-04/401).

S 212-057
(8) Examine the Isolation Valve for volcanic ash (AMM 36-11-04/401).

S 022-058
(9) Remove the APU Air Supply Check Valve to be examined (AMM 36-11-11/401).

S 212-059
(10) Examine the APU Air Supply Check Valve for volcanic ash (AMM 36-11-11/401).

S 022-060
(11) Remove the APU Shutoff Valve to be examined (AMM 36-11-10/401).

S 212-061
(12) Examine the APU Shutoff Valve for volcanic ash (AMM 36-11-10/401).

S 212-062
(13) Examine the ground air connectors for volcanic ash.

S 712-063
(14) Make sure the duct pressure transducers operate (AMM 36-21-00/501).

I. Examine the External Light Lenses

S 212-064
(1) Examine the external light lenses for abrasions. If the lenses are frosted or damaged, they must be replaced when it is possible.

J. Examine the Fuel System

S 682-065
(1) Get fuel samples from each fuel tank sump and examine them for signs of volcanic ash (AMM 12-11-03/301).

S 682-066
(2) Get fuel samples from each surge tank sump (if there is fuel in the surge tank). Examine the fuel samples for signs of volcanic ash (AMM 12-11-03/301).

S 212-067
(3) Examine the surge tank internally for signs of volcanic ash (AMM 28-11-03/401).

K. Examine the Oxygen System

NOTE: Do these steps only if there are signs of volcanic ash contamination in the cockpit and cabin.

S 212-068

(1) Examine the oxygen system as follows:
   (a) Examine the diluter demand regulators for the crews oxygen masks, for volcanic ash.
   (b) Examine the oxygen masks of the portable oxygen cylinders for volcanic ash.
   (c) Examine the passenger and crew oxygen masks for volcanic ash.

L. Examine the Auxiliary Power Unit (APU)

S 212-069

(1) Examine the air intake plenum for signs of volcanic ash (AMM 49-15-03/601).

S 212-070

(2) Examine the exhaust duct for signs of volcanic ash (AMM 49-81-01/601).

NOTE: Look at the air intake plenum and the exhaust duct. If there are no signs of volcanic ash, the procedure to examine the Auxiliary Power Unit (APU) is complete. The remaining APU steps are not necessary.

S 292-071

(3) Inspect the APU compressor and turbine sections with a borescope (AMM 49-21-00/601).

S 022-072

(4) Remove the oil sump magnetic chip detector to be examined (AMM 49-27-04/401).

S 212-073

(5) Examine the magnetic chip detector of the oil sump (AMM 49-27-04/601).

S 212-074

(6) Examine the oil pressure and scavenge filter elements (AMM 49-27-03/601).

S 212-075

(7) Examine the fuel filter elements (AMM 49-31-04/601).

S 212-076
(8) Examine, if installed, the Fuel Divider Filter element (AMM 49-31-08/201).

S 022-077
(9) Remove the Surge Bleed Air Valve to be examined (AMM 49-53-01/401).

S 212-078
(10) Examine the Surge Bleed Air Valve and ducts for signs of volcanic ash (AMM 49-53-01/401).

S 022-079
(11) Remove the APU Air Intake Door to examine the Air Intake Door Actuator (AMM 49-15-05/401).

S 212-080
(12) Examine the APU Air Intake Door Actuator for signs of volcanic ash (AMM 49-15-06/401).

M. Examine the Potable Water System

S 022-081
(1) Remove the air filter to be examined (AMM 38-15-02/401).

S 212-082
(2) Examine the air filter for signs of volcanic ash (AMM 38-15-02/401).

NOTE: Look at the air filters. If there are no signs of volcanic ash, the procedure to examine the Potable Water System is complete. The remaining Potable Water system steps are not necessary.

S 022-083
(3) Remove the compressor to be examined (AMM 38-15-01/401).

S 212-084
(4) Examine the compressor for signs of volcanic ash (AMM 38-15-01/401).

S 682-085
(5) Get a water sample from the water tank and examine it for signs of volcanic ash contamination (AMM 12-14-01/301).

S 022-086
(6) Remove the Water Quantity Transmitter to be examined (AMM 38-14-01/401).

S 212-087
(7) Examine the Water Quantity Transmitter for signs of volcanic ash contamination (AMM 38-14-01/401).

N. Examine the Smoke Detectors and Blowers

S 212-088
(1) Examine, if installed, the smoke detector of the cargo compartment for signs of volcanic ash. If there are signs of ash, replace the cargo compartment smoke detector (AMM 26-16-01/401).

S 212-089
(2) Examine, if installed, the cargo compartment smoke detector blowers for signs of volcanic ash contamination. If there are signs of volcanic ash, replace the blowers (AMM 26-16-01/401).

S 212-090
(3) Examine the E/E Equipment Cooling Smoke Detector for signs of volcanic ash contamination. If there are signs of volcanic ash, replace the smoke detector (AMM 21-58-19/201).

O. Examine the Fire Extinguisher Bottle Nozzles

S 212-091
(1) Examine the fire extinguisher bottle nozzles in the areas that follow for volcanic ash contamination (AMM 26-20-00/001):
(a) The Engines
(b) The Auxiliary Power Unit (APU)
(c) The Cargo Compartment.

P. Examine All Engine Accessories

S 212-092
(1) Examine all engine accessories (this includes the integrated drive generator and oil cooler) for volcanic ash contamination (FIM 71-05-00).

Q. Examine the Landing Gear

S 212-093

(1) Examine the landing gear for signs of volcanic ash contamination. Do the steps that follow:
   (a) Examine the bare inner cylinders of the main and nose landing gear shock struts.
   (b) Examine all hydraulic actuator bare piston rods.
   (c) Examine all of the attachment points of the landing gear components.
   (d) Examine all landing gear:
      1) door hinges
      2) lock mechanisms
      3) ground door release cables and pulleys
      4) ground door release handle bearings.
   (e) Examine all cables and pulleys.
   (f) Examine the brake metering valves.
   (g) Examine the steering mechanism components of the nose landing gear.
   (h) Examine the proximity switches (sensors).
   (i) Examine the main and nose landing gear:
      1) alternate extension system
      2) electrical actuators and related drive mechanisms.

R. Examine the Hydraulic Systems

S 682-094

(1) Use the Reservoir Sampling Valve and get a sample of the hydraulic fluid from the Left, Right, and Center hydraulic reservoirs. Examine the samples for signs of volcanic ash contamination (AMM 29-11-23/401).

S 212-096

(2) Examine the pressurization module components that follow for volcanic ash contamination:
   (a) the air filters
   (b) the module check valves
   (c) the module bleed valves.

S. Examine the Flight Controls

S 212-097

(1) Examine the flight controls for signs of volcanic ash contamination. Do the steps that follow (AMM 27-00-00/001):
   (a) Examine the actuator bare piston rods of the components that follow:
      1) the ailerons
      2) the elevators
      3) the rudder

4) the spoilers.
(b) Examine all control cables.
(c) Examine the stabilizer jack screws.
(d) Examine all hinge surfaces of the flight controls.
(e) Examine the tracks and flap mechanisns of the trailing edge flaps.
(f) Examine the track fairings and linkages of the trailing edge flap.
(g) Examine the leading edge slats and mechanisms.

T. Examine the Wing and Engine Nacelle Thermal Anti-Ice Systems

S 022-098
(1) Remove the Thermal Anti-Ice Valve of the wing to be examined (AMM 30-11-02/401).

S 212-099
(2) Examine the Thermal Anti-Ice Valves of the wing for volcanic ash contamination (AMM 30-11-02/401).

S 022-113
(3) Remove the Thermal Anti-Ice Valves of the engine inlet to be examined (AMM 30-21-03/401).

S 212-100
(4) Examine the Thermal Anti-Ice Valves of the engine inlet for signs of volcanic ash contamination (AMM 30-21-03/401).

U. Examine the Airplane Internally

S 212-101
(1) Examine the airplane internal areas that follow for signs of volcanic ash contamination:
(a) the passenger compartment
(b) the closets
(c) the passenger seats
(d) the powered crew seats
(e) the flight instruments
(f) the electrical/electronic control panels
(g) the lavatories
(h) the lavatory components
(i) the galleys
(j) the galley components
(k) the floor coverings.

S 212-117
(2) If you find ash on the air conditioning ducts on the flight deck, remove and examine the flight deck modules.

S 212-102
(3) Examine the refrigeration/chiller units (if installed) for volcanic ash contamination.

S 212-103
(4) Examine the baggage/cargo systems for volcanic ash contamination.

S 212-104
(5) Examine the main electrical/electronic bay and compartments for volcanic ash contamination.

V. Put the Airplane Back To Its Initial Condition

S 942-105
(1) Put the airplane back to its initial condition after all necessary volcanic ash conditional inspections are completed.

SAS TAIL/TAIL SKID DRAG CONDITION - MAINTENANCE PRACTICES
SAS (CONDITIONAL INSPECTION)
SAS
SAS 1. General
SAS A. 767-200 AIRPLANES;
SAS Do this inspection procedure when the airplane tail was dragged (touched
SAS the runway) when it landed or during a takeoff.
SAS B. 767-300 AIRPLANES;
SAS Do this inspection procedure when you think the airplane tail skid was
SAS dragged (touched the runway) when it landed or during a takeoff.
SAS
SAS NOTE: If the EICAS message "TAIL SKID" is illuminated or if the tail
SAS skid pad paint is scratched, a tail strike may have occurred.
SAS
SAS
SAS TASK 05-51-32-202-001
SAS 2. Tail/Tail Skid Drag Inspection
SAS A. References
SAS (1) AMM 12-15-05/301, Tail Skid Shock Strut/Actuator
SAS (2) AMM 27-48-00/501, Stabilizer Trim Position Indicating System
SAS (3) AMM 32-71-06/201, Tail Skid Lever
SAS B. Procedure
SAS
SAS S 212-002
SAS (1) Visually examine the external skin surface(s) of the lower aft
SAS fuselage. Look for station 1500 (approximate aft cargo bay aft
SAS bulkhead) to the APU compartment. Look for signs of scrapes, burns,
SAS holes, and cracked or buckled belly skin. Also look for fasteners
SAS that are loose or are not there.
SAS
SAS S 212-003
SAS (2) 767-300 AIRPLANES;
SAS Do the steps that follow:
SAS (a) Examine the tail skid fairing. Look for signs of scrapes,
SAS burns, holes, and fasteners that are loose or are not there
SAS (Fig. 201).
SAS (b) Examine the tail skid lever for cracks or fractures.
SAS (c) Examine the tail skid pad (AMM 32-71-06/201).
SAS
SAS NOTE: The minimum dimension between the top of the pad attach
SAS bolt and the pad wear surface is approximately 0.5 inch.
SAS

SAS
SAS S 212-004
SAS (3) When there is external damage found, do the steps that follow:
SAS
SAS NOTE: External damage is defined as any damage found during above mentioned inspections that can be related to the impact from a tail strike. Wear marks on the tail skid pad are not considered external damage.
SAS
SAS (a) Examine the fuselage internally as follows:
SAS 1) Look for bent or cracked stringers, frames, or clips.
SAS 2) Look for buckled or wrinkled webs, fasteners that are loose or are not there.
SAS 3) 767-300 AIRPLANES;
SAS Do the steps that follow:
SAS a) Examine the tail-skid-attachment supports and the fuse pin (Fig. 201).
SAS b) Look at the pop-up indicator on the tail skid shock strut actuator (AMM 12-15-05/301).
SAS
SAS NOTE: The indicator extends when servicing is necessary.
SAS
SAS c) If the pop-out indicator is extended on the tail skid shock strut actuator, service the unit per AMM 12-15-05/301.
SAS d) Examine the lower area of the aft pressure bulkhead for damage.
SAS
SAS S 212-006
SAS (4) 767-300 AIRPLANES;
SAS Do the steps that follow:
SAS (a) Examine the stabilizer/trim-position-indication system components (Fig. 202). These components are in the stabilizer/trim jackscrew compartment.
SAS 1) Look for broken cables.
SAS 2) Look for cables that are out of the pulley groove.
SAS 3) Examine the position transmitter modules for damage.

SAS (b) When there is no external damage to the tail skid or fuselage structure, do the stabilizer-trim-position-indicating system operational test thru the step to make sure the position indicating system shows stabilizer movement correctly (AMM 27-48-00/501).

SAS NOTE: (AMM 27-48-00/501) If no external damage is found, perform the task Stabilizer Trim Position Indicator System Operational Test.

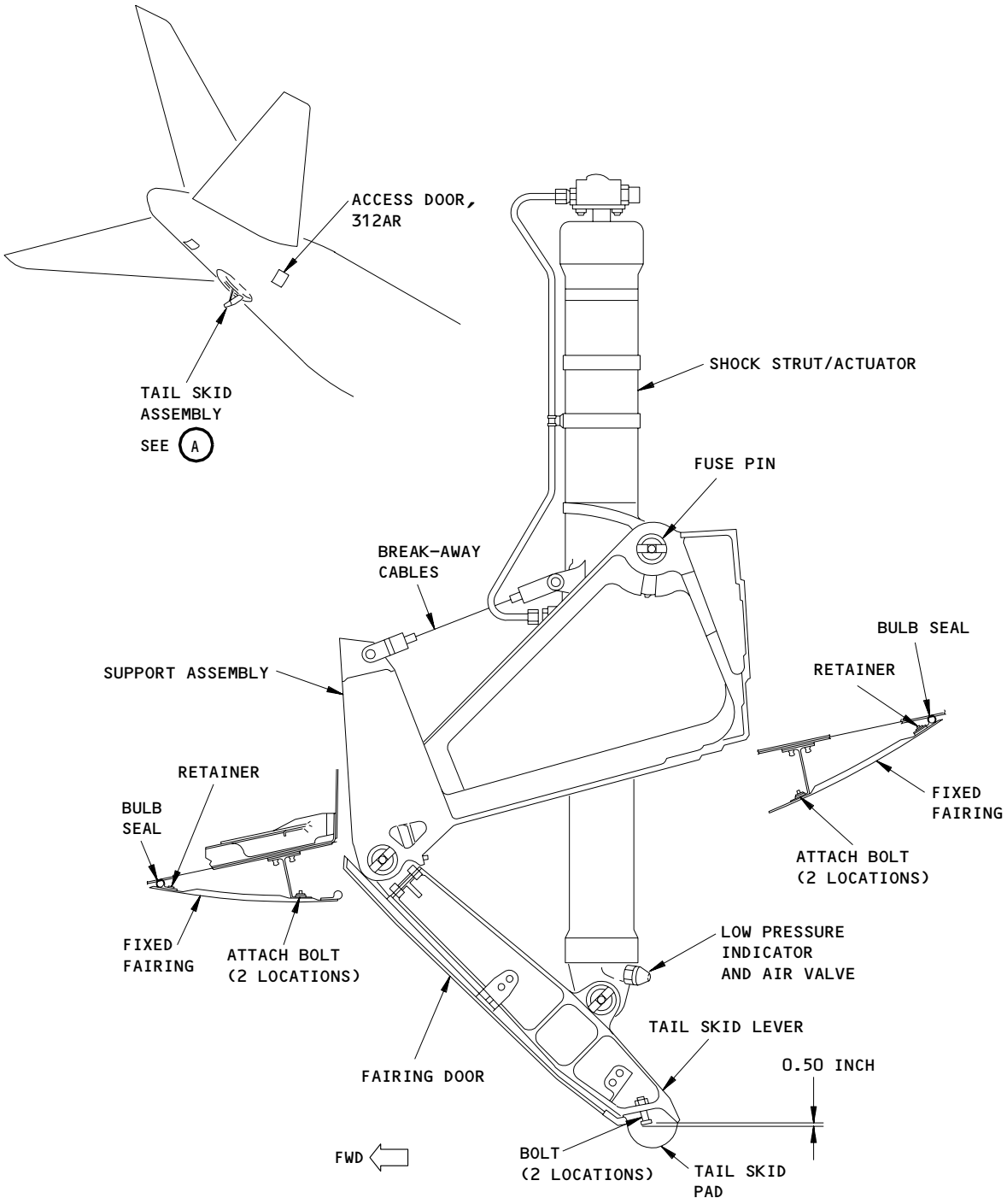
SAS NOTE: External damage is defined as any damage found during above mentioned inspections that can be related to the impact from a tail strike. Wear marks on the tail skid pad is not considered external damage.

SAS (c) When there is external damage to the tail skid or fuselage structure, do the complete stabilizer-trim-position-indicating system operational test (AMM 27-48-00/501).

SAS NOTE: When external damage is found perform the above mentioned test.

SAS S 352-005

SAS (5) When internal damage or external damage is found, refer to the applicable Structure Repair Manual procedure(s) for repair.

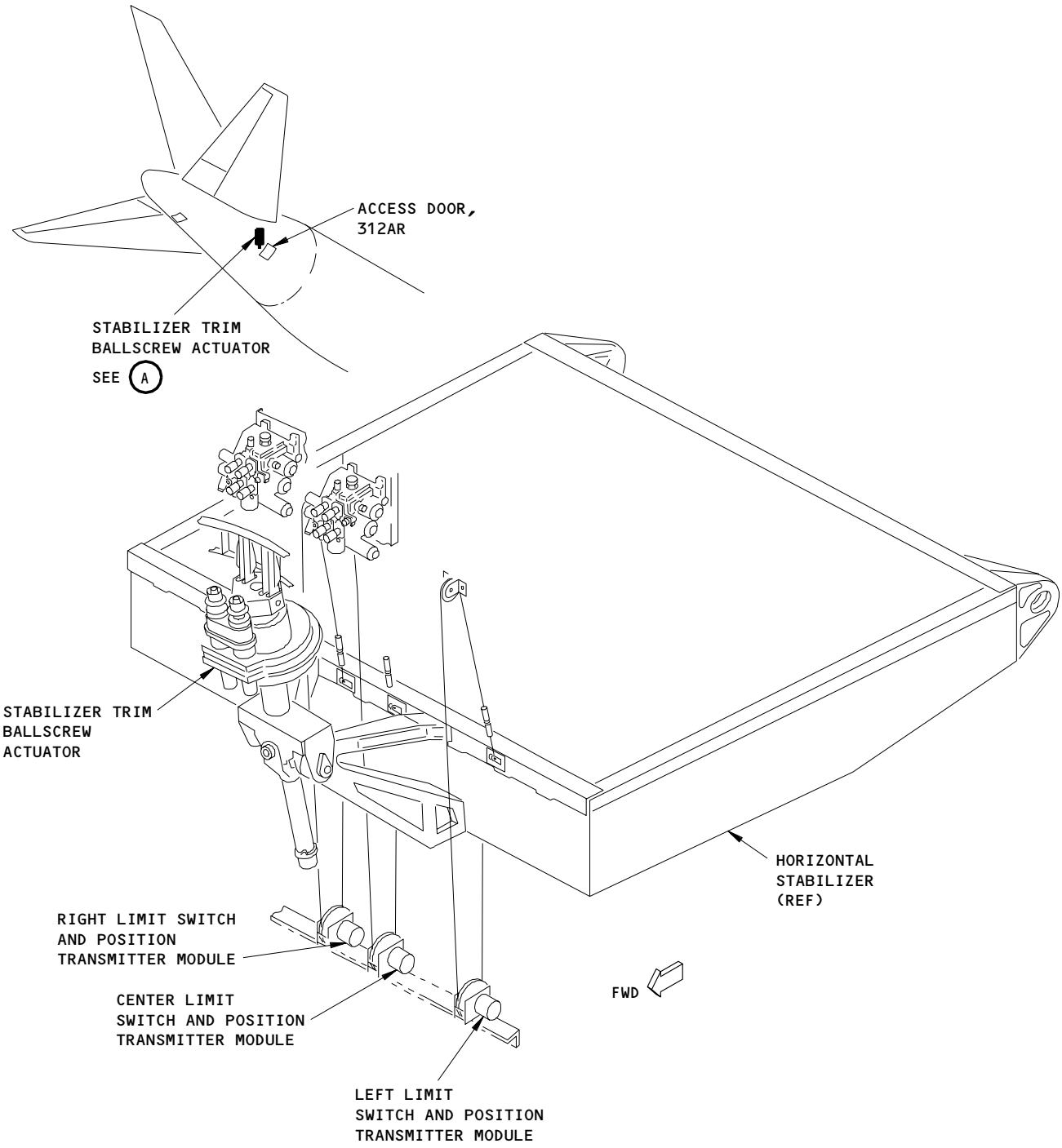


SAS
SAS

TAIL SKID ASSEMBLY
A

SAS
SAS

Tail Skid Lever Installation
Figure 201



Stabilizer Trim Components
Figure 202

LANDING GEAR ALTERNATE EXTENSION CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. The load limiters of the main and nose landing gear must be examined after each alternate extension. Look for damage to the crushable core on the inner side of the load limiters.

   TASK 05-51-33-212-001

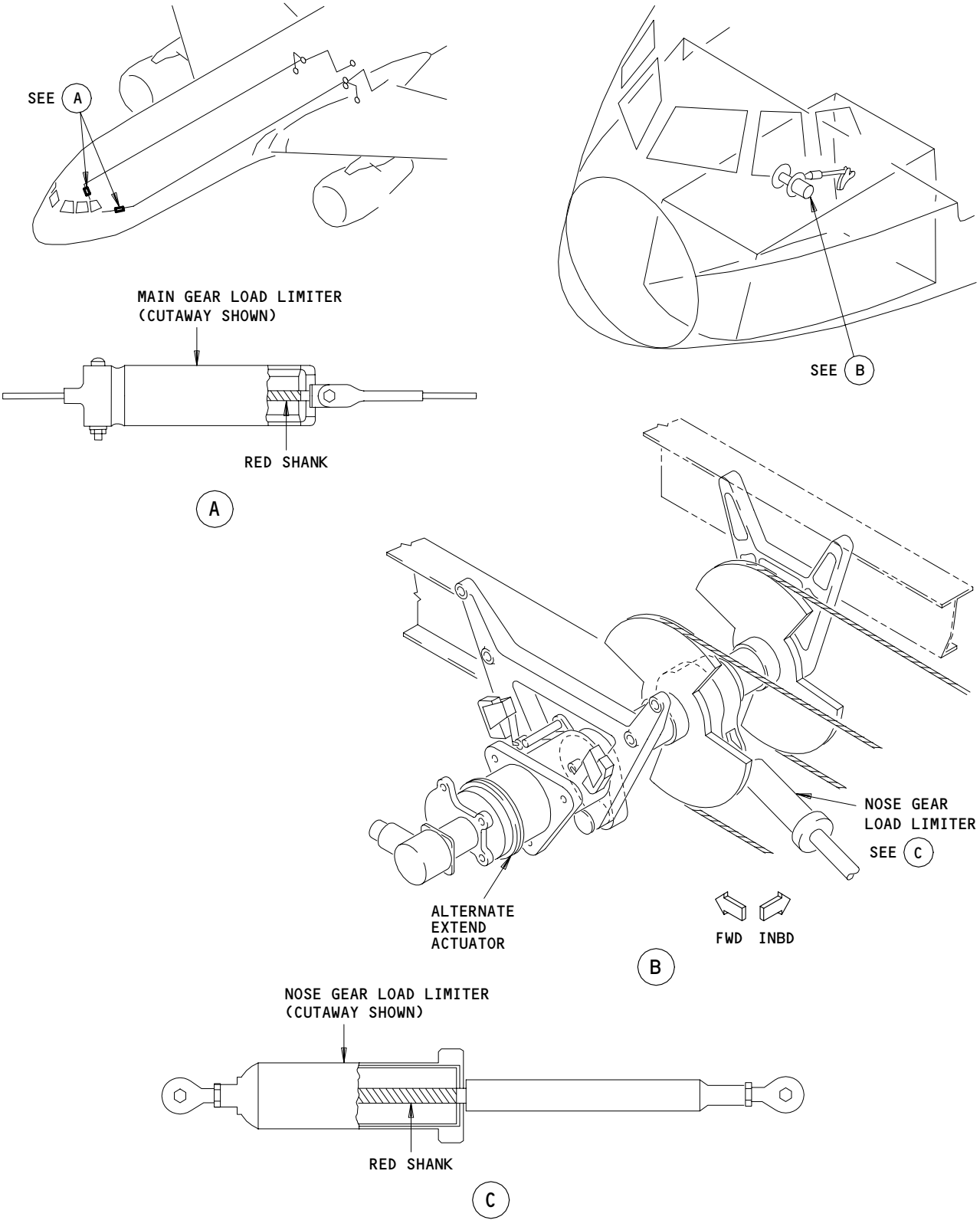
2. Examine the Landing Gear Alternate Extend Load Limiters (Fig. 201)
   A. References
      (1) AMM 06-41-00/201, Fuselage (Major Zones 100 and 200) Access Doors and Panels
      (2) AMM 32-35-14/401, Main Gear Alternate Extend Load Limiter
      (3) AMM 32-35-15/401, Nose Gear Alternate Extend Load Limiter
   B. Access
      (1) Location Zone
          119 Main Equipment Center

      (2) Access Panel
          119AL Main Equipment Center

   C. Procedure

      S 012-002
      (1) Open the access panel, 119AL, for the main equipment center (Ref 06-41-00).

      S 212-003
      (2) Examine the load limiters of the main landing gear as follows (AMM 32-35-14/401):
          (a) Examine the load limiter of the left main landing gear. It is found along the left sidewall of the nose wheel well, in the electrical/electronic access bay.
          (b) Examine the load limiter of the right main landing gear. It is found in the ceiling, above the aft bulkhead of the nose wheel well, approximately 2 feet right of the centerline.



Landing Gear Alternate Extend Load Limiter Check
Figure 201

(c) When more than 0.20 inches of the shank on a load limiter for the main landing gear shows, replace the load limiter.

S 212-004

(3) Examine the load limiter of the nose landing gear. It is found over the center of the nose landing gear wheel well, in the electrical/electronics access bay (AMM 32-35-15/401).

(a) When more than 0.20 inches of the shank on a load limiter for the nose landing gear shows, replace the load limiter.

D. Put the Airplane Back to Its Initial Condition

S 412-005

(1) Close the access panel, 119AL, for the main equipment center (AMM 06-41-00/201).

OVERWEIGHT LANDING - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. Overweight Landing
      (1) When the airplane lands at a weight that is above the Maximum-Landing Weight (MLW) as specified in the Airplane Flight Manual (AFM), it is an overweight landing.
         (a) When an overweight landing occurs, an airplane inspection is necessary as defined in this procedure.
         (b) If the landing was also a hard landing, the Hard Landing Maintenance Practices Conditional Inspection (AMM 05-51-01/201), plus the Overweight Landing Conditional Inspection must be done. If damage is found in the Phase I Conditional Inspection of either procedure, then both the Overweight and Hard Landing Phase II inspections must be done.

            NOTE: The pilot must make the decision if the airplane landing was a hard landing.

   B. The Inspection
      (1) The inspection is divided into two phases (Phase I and Phase II).

         NOTE: The pilot must make the decision if the airplane landing was a hard landing. An Overweight Landing that was not accompanied by a Hard Landing does not require a hard landing inspection.

         (a) Phase I, option A inspection is applicable when the airplane landing was overweight, but was not a hard landing.
         (b) Phase I, option B inspection is applicable when the airplane landing was overweight and also a hard landing.
         (c) If the inspection during Phase I does not show that damage has occurred, more examination is not necessary.

(d) If Phase I, option A inspection shows that damage has occurred, you must do the Phase I, option B inspection.
(e) If the Phase I, option B inspection shows damage has occurred, you must do the Phase II inspection.

(2) When the conditional inspection tells you to "examine" a component, look for these conditions (replace or repair the components, if necessary):
(a) Cracks
(b) Creases or cracks in the skin or web
(c) Skin wrinkling that crosses a line of fasteners
(d) Pulled apart structure
(e) Loose paint (paint flakes)
(f) Twisted parts (distortion)
(g) Bent components
(h) Fastener holes that have become larger or longer
(i) Loose fasteners
(j) Fasteners that have pulled out or are gone
(k) Delaminations
(l) Misalignment
(m) Interference
(n) Other signs of damage.

TASK 05-51-35-212-001

2. Phase I Inspection

A. General

(1) If the pilot believes the Overweight Landing was also accompanied by a Hard Landing as described in AMM 05-51-01/201, do the Hard Landing Conditional Inspection examination, Phase I inspection (AMM 05-51-01/201). If damage is found in the Phase I Conditional Inspection of either procedure (Overweight and Hard Landing) then both Hard Landing and Overweight Landing Conditional Inspection Phase II inspections must be done.

B. Phase I, option A, Examine the airplane structure for an overweight landing that was not a hard landing.

S 212-002

(1) Examine the airplane landing gear areas as follows:
(a) Examine the main landing gear tires and wheels for signs of damage.
(b) Examine the upper and lower ends of the main landing gear shock strut for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

(c) Examine the main landing gear truck beams for signs of distortion or other damage.
(d) Examine the nose landing gear tires and wheels for signs of damage.

(e) Examine the upper and lower ends of the nose landing gear shock strut for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

C. Phase I, option B, Examine the airplane structure for an Overweight Landing that was also a hard landing.

S 212-003

(1) Examine the main landing gear areas as follows:
(a) Examine the main landing gear tires for damage.
(b) Examine the main landing gear wheels for cracks.
(c) Examine the upper and lower ends of the main landing gear shock strut for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

(d) Examine the doors and linkage of the main landing gear strut doors for distortion, cracks, or other signs of damage.
(e) Examine the drag strut, side strut, and trunnion fittings of the main landing gear. Look for distortion, cracks, or other signs of damage.
(f) Examine the inside diameter of the fuse pins for the drag strut and the outboard end of the gear beam. Look for distortion.
(g) Examine the positioning mechanism and linkage of the main landing gear truck. Look for distortion, cracks, or other signs of damage.
(h) Examine the truck beams of the main landing gear for distortion, cracks, or other signs of damage.

S 212-004

(2) Examine the nose landing gear areas as follows:
(a) Examine the nose wheel well for buckling, and paint that has flaked. Also look for fasteners that have pulled out or that are not in the web of the nose wheel well. Look carefully in the area near the trunnion and the drag strut support fittings.
(b) Examine the nose landing gear tires for damage.
(c) Examine the nose landing gear wheels for cracks.
(d) Examine the upper and lower ends of the nose landing gear shock strut for signs of hydraulic fluid leakage.

NOTE: A small quantity of hydraulic fluid on the inner cylinder is satisfactory.

(e) Examine the outer cylinder of the nose landing gear for distortion, cracks, or paint that has flaked.

S 212-005

(3) Examine the Fuselage and Wing areas as follows:
(a) Examine the engine strut panels, doors, and structure. Look for buckling, cracks, and for fasteners that have pulled out or are not there.
(b) Examine the leading edge wing-to-body fairing for movement from its usual position. Look for fastener hole elongation or tear out, and cracks in the skin. Also look for fasteners that have pulled out or are not there.
(c) Examine the lower fuselage structure (body sections 46 and 48) for signs that the runway was touched.

S 212-018

(4) Do the Hard Landing Conditional Inspection examination, Phase I inspection (AMM 05-51-01/201). If damage is found in the Phase I Conditional Inspection of either procedure (Overweight and Hard Landing) then both Hard Landing and Overweight Landing Conditional Inspection Phase II inspections must be done.

NOTE: When both the Hard Landing Conditional Inspection, and the Overweight Landing Conditional Inspections, as defined above, must be done, it is not necessary to do duplicative tasks twice, such as: Landing gear, nacelle struts, fuselage, wing LE fairings, horizontal stab, cargo area, engine inspection, flight controls, etc.

TASK 05-51-35-212-006

3. Phase II Examination

A. References
(1) AMM 05-51-10/201, Dragged Engine Nacelle/Engine Seizure/Engine and Strut Damage Condition
(2) AMM 07-11-01/201, Jacking Airplane
(3) AMM 27-00-00/001, Flight Controls
(4) AMM 32-11-00/001, Main Gear
(5) AMM 32-11-02/401, Main Gear Shock Strut
(6) AMM 32-21-00/001, Nose Gear
(7) AMM 32-21-01/601, Nose Gear
(8) AMM 32-32-00/501, Main Gear Extension and Retraction
(9) AMM 32-34-00/501, Nose Gear Extension and Retraction
(10) AMM 32-51-00/501, Nose Wheel Steering System

B. Examine the Landing Gear

S 722-007

(1) Do a test of the main and nose landing gear. Look for signs of interference, misalignment, or distortion.
   (a) Jack the airplane (AMM 07-11-01/201).
   (b) Retract and extend the main landing gear (AMM 32-32-00/501).
   (c) Retract and extend the nose landing gear (AMM 32-34-00/501).

S 212-008

(2) Examine the main landing gear areas as follows (AMM 32-11-00):
   (a) Examine the outer and inner cylinder lugs for distortion, cracks, and other types of damage.
   (b) Examine the drag strut linkage for cracks or other types of damage.
   (c) Examine the side strut linkage for cracks or other types of damage.
   (d) Look at the hydraulic fluid levels in the shock struts. Make sure that the levels are correct.
   (e) If a high drag or side load landing, and a overweight landing occur at the same time, remove the inner cylinders. Do this also if the shock strut hydraulic fluid is low. Look for distortion or cracks (AMM 32-11-02/401).
   (f) Examine the drag strut for cracks, distortion, and other types of damage.
   (g) Examine the side strut and the side strut attachments for cracks and other types of damage.
   (h) Examine all of the bolts and pin connections in the main landing gear for distortion.
   (i) Examine the main landing gear truck positioning mechanism, and the linkage for cracks and other types of damage.
   (j) Examine the main landing gear truck beams for distortion, cracks, and other types of damage.
   (k) If it is necessary to remove a main landing gear wheel (or wheels) because of a blown tire, do the steps that follow:
      1) Examine the wheel structure for cracks.
      2) Examine the brake assembly for damage.

S 212-009

(3) Examine the nose landing gear areas as follows (AMM 32-21-00/001):
   (a) Examine the nose wheel well for buckled structure, paint that has flaked, and for cracks. Also look for fasteners that have pulled out or are not in the web of the nose wheel well. Look carefully in the areas near the trunnion and the drag strut support fittings.
   (b) Examine the drag strut support fittings for paint that has flaked and for distortion and cracks. Also look for fasteners that have pulled out, or for fasteners that are not there.

(c) Examine the outer cylinder trunnion-fitting area and the drag brace linkage. Look for distortion, cracks, paint that has flaked, and bent parts. Also look for fasteners that have pulled out, or for fasteners that are not there.
(d) Make sure the shock strut pressure is normal and the hydraulic fluid is at the correct level.
(e) If the last two steps show signs of possible damage, remove the nose landing gear inner cylinder. Examine it for distortion, cracks and other types of damage.
(f) If an overweight landing occurs and the nose landing gear hits hard, remove the inner cylinder. Examine the inner cylinder for distortion, cracks, and other types of damage (AMM 32-21-01/601).
(g) Make sure the nose wheel steering system operates correctly, and the steering mechanism is rigged correctly (AMM 32-51-00/501).

S 582-010

(4) Lower the airplane off of the jacks (AMM 07-11-01/201).

C. Examine the Fuselage and Wing Areas

S 212-011

(1) Examine the fuselage and wing areas as follows:
(a) Examine the lower fuselage structure for skin that has buckled, and paint that has flaked. Also look for fasteners that have pulled out or are not there. Look carefully at the area below the body floor beams, just aft of the wing center section.
(b) Examine the wing-to-fuselage joints, and the wheel well bulkheads for cracks and other types of damage. Look for paint that has flaked, and fasteners that have pulled out or are not there.
(c) Examine the upper fuselage structure above the primary wing spars for buckled structure, distortion, cracks, and paint that has flaked. Also look for fasteners that have pulled out or are not there.
(d) Examine the main landing gear wheel well bulkheads for buckled structure, cracks, paint that has flaked, and other types of damage. Also look for fasteners that have pulled out or are not there.
(e) Examine the side-of-body ribs for cracks in the area of the rear spar.
(f) Examine the rear spar for permanent buckles between the tank end and the side of the body.
(g) Examine the nose landing gear wheel well aft bulkhead for buckled structure. Look for cracks, paint that has flaked, and fasteners that have pulled out or are not there.
(h) Examine the fuselage structure immediately outboard of the nose wheel well. Look for buckling, cracks, paint that has flaked, and fasteners that have pulled out or are not there.

(i) Look for signs of fuel leaks or other fluids leaking in the areas that follow:
1) The wing
2) The nacelles
3) The engine struts
4) The external surfaces of the fuselage
5) The nose landing gear wheel well
6) The main landing gear wheel wells.

(j) Examine the fuselage skin attachments above the landing gear beam. Look for distortion, paint that has flaked, and for fasteners that have pulled out or are not there.

(k) Examine the lower fuselage (body sections 46 and 48) for signs that it touched the runway. If there are signs of damage, examine the areas that follow. Look for broken, bent, out of shape parts, or other types of damage:
1) The APU firewall
2) The APU drain
3) The APU doors
4) The drain mast
5) The lower fuselage skin, frame, and shear ties.

S 712-012

(2) Make sure the flight controls move freely.

S 222-013

(3) Make sure the flight control cables have the correct tension.

D. Cargo Loading Areas

S 212-014

(1) Make sure that the cargo loading system for containers and pallets operates correctly.
(a) Examine the side guides, seat tracks, pallet locks and rollers for breaks, cracks, and retaining lips that are not there.
(b) Make sure that the rollers (where installed) move freely.
(c) Examine the cargo restraint system in all cargo compartments.

E. Engine Nacelles

S 212-015

(1) Do the Dragged Engine Nacelle Inspection procedure (AMM 05-51-10).

AIRFRAME VIBRATION CONDITION - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. One task is supplied in this procedure. The task is airframe vibration conditional inspection.
   B. Operators have experienced airframe vibration and have not been able to identify the cause of the vibration. This procedure supplies a list of known causes of airframe vibration and gives a description of when the vibration occurs. The corrective action is listed in the table that follows.
   C. The items listed below have been identified as causes for airframe vibration:
      (1) Mismatch between engine and rotor speeds
      (2) Thrust reverser/fan duct vee-band latch tension below limits
      (3) APU inlet door open in flight with APU off
      (4) APU inlet door port assembly damaged
      (5) Broken spring in APU check valve
      (6) Faulty yaw damper
      (7) Pre-loaded flight deck bulkhead partition
      (8) Faulty recirculation fan
      (9) Loose or missing wing to body fairing seals
      (10) Worn nose landing gear components
      (11) External door handles not fully closed
      (12) Nose landing gear spin brake spring
      (13) Seized RAM Outlet Actuator.
      (14) Loose, damaged or missing LE slat span-wise bulb seals.
      (15) Overwing escape hatch step pin migration or improper step cable stowage.
      (16) Insufficient fillet seal and holes in sealant in STA 786.
      (17) Cargo container movement.

TASK 05-51-38-202-001

2. Airframe Vibration Conditional Inspection

A. Procedure

S 202-003

(1) Use the table that follows to do an airframe vibration conditional inspection.

ITEM	DESCRIPTION	CAUSES	CORRECTIVE ACTION
1. Engine Beat Noise	"Beat" type noise in cockpit. Can also be felt in flight controls.	Difference in engine rotor speeds.	Synchronize N1 speeds. Make sure engines are trimmed to match Engine Vane and Bleed Control (EVBC) schedules. Consider two-plane fan trim balancing (Ref 767-SL-72-2).
For all engines except JT9D:	"Beat" type noise in cockpit. Can also be felt in flight controls.	Difference in engine rotor speeds.	Synchronize N1 speeds.
For JT9D engines only:	"Beat" type noise in cockpit. Can also be felt in flight controls.	Difference in engine rotor speeds.	Synchronize N1 speeds. Make sure engines are trimmed to match Engine Vane and Bleed Control (EVBC) schedules. Consider two-plane fan trim balancing (Ref 767-SL-72-2).
2. High Engine Vibration	High vibration in flight. Varies with flight conditions. Felt in flight controls. Peak vibration near 88% N1.	Thrust reverser/ fan duct vee-band latch tension.	Adjust thrust reverser/fan duct vee-band latch tension to the correct value (AMM 78-31-02/501).

ITEM	DESCRIPTION	CAUSES	CORRECTIVE ACTION
3. Vibration in Flight Controls	Control column vibration in all flight modes.	APU inlet door open in flight with APU off.	Replace the APU control unit (AMM 49-61-05/401).
	Control column and airframe vibration during climb between FL 150 and FL 250.	APU inlet door port assembly cracked and delaminated.	Replace APU inlet door port assembly (AMM 49-15-08/401).
4. Light Elevator Vibration	Elevator vibration during power reduction and switch-over to high stage bleed air. Control column vibration after takeoff.	Broken spring in APU check valve.	Replace the APU check valve (AMM 36-11-11/401).
5. Rudder Pedal Vibration	Rudder pedal vibration when flaps move from flaps 5 to flaps 20.	Right yaw damper module and servo.	Replace the right yaw damper module and servo (AMM 22-21-04/401 and AMM 22-21-02/401)
6. Flight Deck Noise (Bang)	A loud bang is heard on the flight deck. The sound comes from the bulkhead partition between the forward galley and flight deck.	Partition frame preload on partition structure.	Adjust partition frame to remove preload. Loosen the frame installation fasteners and bulkhead tie rods then carefully tighten so the partition structure does not have a preload.
7. Vibration in Cruise	Airframe vibration at FL 390. Vibration stops when left recircu-lation fan is turned off.	Left recirculation fan.	Replace the left recirculation fan (AMM 21-25-01/401).

ITEM	DESCRIPTION	CAUSES	CORRECTIVE ACTION
8. Noise and Vibration in Cabin	Noise and vibration near seat rows 10 and 11, right side of cabin.	Loose or missing seals at the forward edge of the wing-to-body fairing.	Inspect and replace the seals at the forward edge of the wing-to-body fairing (AMM 53-52-01/401)
	Noise and vibration or hum on right side near BS700 near wing-to-body fairing area. Tone is continuous during high wing loading, such as spoiler deployment or high bank angle turns.	Loose, damaged or missing LE slat spanwise bulb seals, on the right inboard number 7 slat.	Inspect and replace LE slat spanwise bulb seals (AMM 27-81-01/401, AMM 27-81-01/601).
	Loud inflight noise and vibration in the mid-cabin area.	Overwing escape hatch step hinge pin migrating during flight. The escape hatch step bulging on the forward edge.	Inspect and adjust the overwing escape hatch (AMM 52-21-01/201).
9. External door handles not fully closed.	Vibration after takeoff in climb and cruise.	Door handle jammed out of position which puts the handle into the airstream.	Make sure that all doors are correctly closed.

ITEM	DESCRIPTION	CAUSES	CORRECTIVE ACTION
10. Nose Landing Gear Vibration	Abnormal nose gear vibration during taxi, takeoff and landing.	Incorrect gap between the upper torsion link and steering collar.	Re-shim gap between the upper torsion link and steering collar (AMM 32-21-01/401).
		Worn bushings at the upper torsion link and steering collar.	Replace the bushings at the upper torsion link and steering collar (AMM 32-51-01/401).
		Wheels/tires out of balance. Wheel bearings worn.	Replace wheels/tires and wheel bearings (AMM 32-45-02/401).
	Vibration and noise when nose gear is retracted.	Nose wheel spin brake spring/ pad assembly.	Install improved nose wheel spin brake spring/pad assembly (Ref 767-SL-32-48-A).
11. Airframe vibration in cruise	Airframe vibration reported as airplane speed related, movement of engine thrust levers had no noticeable effect on the level of vibration.	Found seized "RAM OUTLET-ACTUATOR"	Ram-Air Inlet Door (AMM 21-53-01/401).
12. Noise in Cabin	A high frequency inflight cabin noise near seat 19AB just forward of the left midlavatory.	Insufficient fillet seal and small holes in the sealant at the STA 786 wing spar and fuselage longeron joint.	Remove and replace sealant (AMM 51-31-01/201).
	Loud bangs in cabin and flight deck.	Gaps between cargo containers.	Maintain gaps between containers (refer to 767-SL-25-051-A).

DAMAGE DUE TO ENGINE BLADE OUT - INSPECTION/CHECK

1. General
   A. This subject will address the maintenance practices as appropriate following a significant blade loss event and prior to returning the airplane to revenue service. Significant blade loss events will be considered those which result in excess of 0.75 blade equivalent unbalance and/or have reports of abnormally high vibration levels reported during flight.
   B. The following are the minimum maintenance inspection checks:
      (1) General Visual Check
      (2) Electrical Equipment Rack (E1, E2, E3, E5, and E8) Inspection.

TASK 05-51-42-202-001

2. Engine Blade Out - General Visual Check
   A. Procedure

      S 212-002
      (1) When doing the general visual check look for these conditions:

      NOTE: Repair all damage found per the standard SRM procedure.

      (a) Cracks
      (b) Pulled apart structure
      (c) Loose paint (paint flakes)
      (d) Twisted parts (distortion)
      (e) Bent components
      (f) Fastener holes that become larger or longer
      (g) Loose fasteners
      (h) Fasteners that have pulled out or are gone
      (i) Delaminations
      (j) Misalignment
      (k) Interference
      (l) Excessive looseness or wear
      (m) Excessive loading
      (n) Peening of pins and bushings
      (o) Brushing/bearing damage
      (p) Bushing bearing fusion
      (q) Bolt distortion
      (r) Lug distortion or damage
      (s) Misalignment
      (t) Other signs of damage

TASK 05-51-42-202-003

3. Engine Blade Out - EE Bay and Flight Deck Panels Inspection

A. References

(1) AMM 20-10-01/401, E/E Rack-Mounted Components - Removal/Installation

B. Procedure

S 212-004

(1) EE Bay Inspection for damage in the following areas:

NOTE: Repair all damage found per the standard SRM procedure.

(a) E1 electrical equipment rack stanchions and its attachments to structure, shelves, and trays, do this task: E/E box removal (AMM 20-10-01/401).
(b) E2 electrical equipment rack stanchions and its attachments to structure, shelves, and trays, do this task: E/E box removal (AMM 20-10-01/401).
(c) E3 electrical equipment rack stanchions and its attachments to structure, shelves, and trays, do this task: E/E box removal (AMM 20-10-01/401).
(d) E5 electrical equipment rack stanchions and its attachments to structure, shelves, and trays, do this task: E/E box removal (AMM 20-10-01/401).
(e) E8 electrical equipment rack stanchions and its attachments to structure, shelves, and trays, do this task: E/E box removal (AMM 20-10-01/401).

S 212-005

(2) Flight Deck Panel Inspection:

NOTE: Repair all damage found per the standard SRM procedure.

(a) P1 Captain instrument panel
(b) P2 Center instrument panel
(c) P3 First officer instrument panel
(d) P5 Pilots' overhead panel
(e) P7 Glareshield panel
(f) P8 Aft electronic panel
(g) P9 Forward electronic panel
(h) P11 Component circuit breaker panel

S 862-006

(3) Put the airplane back to its usual condition:

(a) Re-install all E/E Boxes removed for inspection access, do this task: E/E Rack-Mounted Components - Removal/Installation (AMM 20-10-01/401) .

(b) Re-install all Flight Deck Panels removed for inspection access.

INTERIOR ICE - MAINTENANCE PRACTICES (CONDITIONAL INSPECTION)

1. General
   A. This procedure is to inspect the interior of the airplane for ice after continuous operation in cold weather, and remove ice if it is found.
   B. In the usual operation of the airplane, air comes through the airplane structure. During flight, the water vapor in the air can condense and freeze in the airplane. When you continuously operate the airplane in cold weather, ground temperatures below the freezing point will not let the ice melt.

TASK 05-51-53-002-001

2. Interior Ice Removal (Fig. 201)
   A. Access
      (1) Location Zones
          100 Lower Half of Fuselage
          200 Upper Half of Fuselage
   B. Upper Lobe Ice Inspection

S 202-002

      (1) Get access to the main deck overhead above WL 300 in the front, middle and aft stations.
          (a) To get access on passenger airplanes, you must also remove some of the main deck ceiling panels.

S 582-003

      (2) Remove or lift the insulation blankets to do a check of the airplane skin, stringers, and frames.
          (a) Make sure no ice has collected on the airplane skin, stringers or frames.
              1) If you do not find ice, you must do the Lower Lobe Ice Inspection.
              2) If you do find ice, you do the Overall Airplane Ice Removal.
   C. Lower Lobe Ice Inspection

      NOTE: Do this procedure to find if ice has collected in the lower lobes (below WL 200).

S 202-004

      (1) Remove the floor panels over the aisles in the main deck at approximately STA 925.

S 202-005
(2) Look for ice collection between the longitudinal floor beams over the wing box and wheel well.

S 202-006
(3) Remove the sidewall liners in the aft lower cargo compartment at approximately STA 1400.

S 202-007
(4) Look for ice collection in the bilge area.
(a) If you do find ice, you do the Overall Airplane Ice Removal.
(b) If you do not find ice, no further action is necessary.

D. Overall Airplane Ice Removal

NOTE: Do this procedure to remove all ice that has collected throughout the airplane structure.

S 202-009
(1) Move the airplane to a hangar where the air temperature is above 32°F (0°C).

S 202-010
(2) Open the doors on the main deck to let the air flow freely.

S 202-011
(3) Remove all the main deck seats and floor panels to get access to the ice.

S 202-012
(4) Remove the insulation blankets from the sidewall and below the floor in the forward and aft lower lobe cargo compartment where it is possible.

NOTE: This will let the water flow freely to the structural drains and will make sure the blankets do not get wet.

S 202-013
(5) Remove the insulation blankets in the nose wheel well area (forward of the EE bay).

S 202-014

WARNING: DO NOT PUT HOT AIR DIRECTLY ON HALON OR OXYGEN BOTTLES. IF YOU PUT HOT AIR ON THE HALON OR OXYGEN BOTTLES, THE BOTTLES CAN EXPLODE.

CAUTION: THE TEMPERATURE OF THE HOT AIR MUST NOT BE ABOVE 150°F (70°C). HOT AIR CAN CAUSE DAMAGE TO AIRPLANE SYSTEMS.

(6) Use a conditioned ground cart to blow hot air on the open airplane structure in the lower lobes and main deck (if it is applicable) to melt the ice that has collected.

S 202-015

(7) Make sure the airplane's structural drains in the bilge are open to let the water drain.

S 202-016

(8) Use (Fig. 201) to find the time needed to melt the ice.

NOTE: You can use a conditioned ground cart to heat the inside of the airplane. This will shorten the time needed to melt the ice.

S 202-017

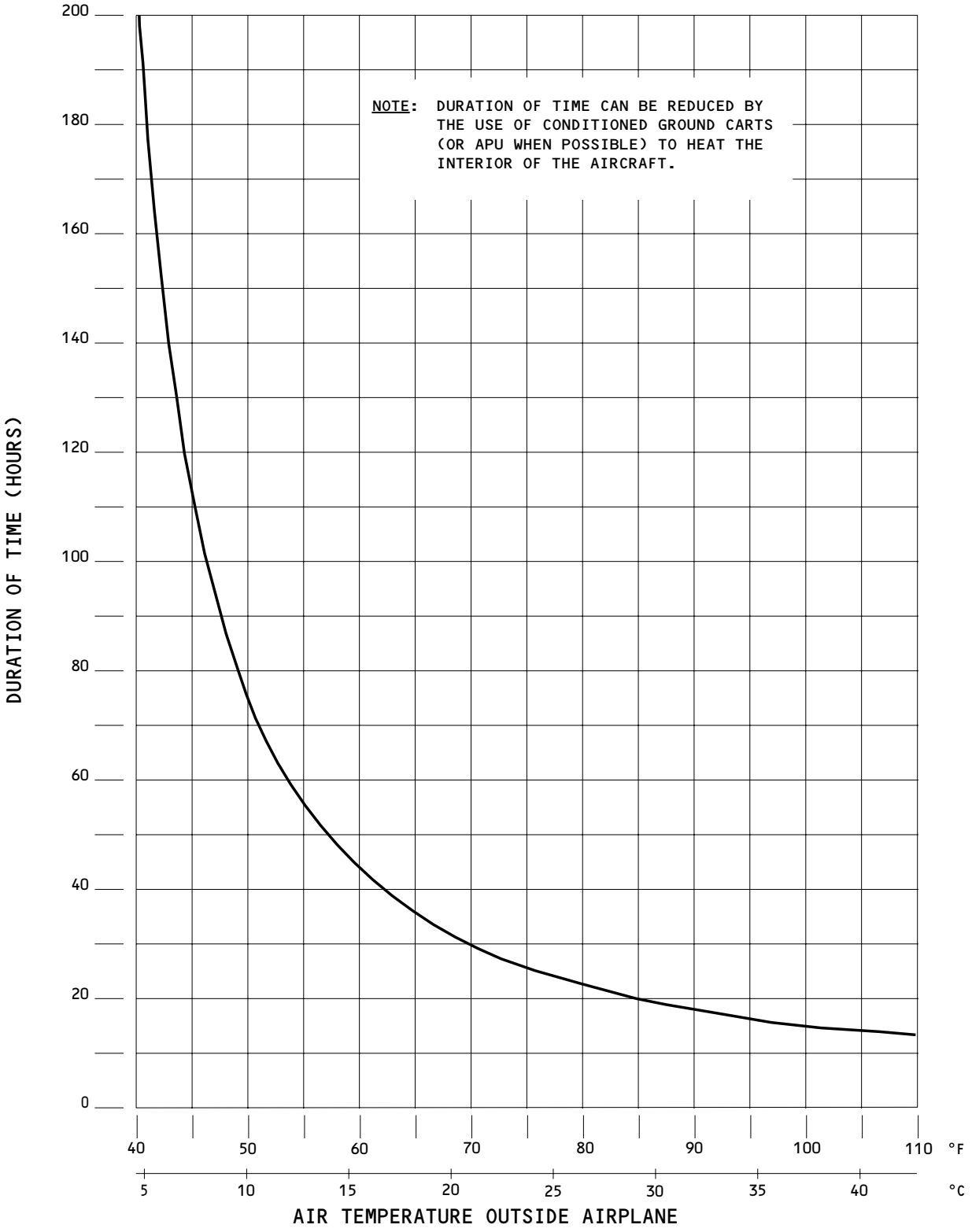
(9) After the water drains, put the airplane back to its usual condition.

S 202-018

(10) You must remove or dry all wet insulation blankets before you install them again.

S 202-019

(11) After the water drains, put the airplane back to its usual condition.



Time Required to Melt Interior Ice
Figure 201

SMOKE OR FUMES IN THE CABIN - MAINTENANCE PRACTICES

1. General
   A. This procedure contains an inspection to find the cause of smoke or fumes in the cabin during operation.

TASK 05-51-56-202-001

2. Smoke or Fumes in Cabin Conditional Inspection
   A. References
      (1) FIM 21-00-21/101, Air Conditioning System Oil Smoke/Fume Contamination (Removal)
   B. Examine the Cabin

      S 282-002
      (1) If smoke or fumes are present in the cabin during airplane operation, do this task: Air Conditioning System Oil Smoke/Fume Contamination (Removal), FIM 21-00-21/101.

ACID SPILLAGE CONDITION - MAINTENANCE PRACTICE

(CONDITIONAL INSPECTION)

1. General
   A. This procedure has one task.
      (1) A conditional inspection for acid spillage.
   B. This task has an inspection and clean up procedures for areas where acid has touched the airplane. Acid spills, unless neutralized, can rapidly corrode metallic structure.
   C. The primary source of acid spillage is in the battery compartments where acid electrolytes may overflow during charging or spill during battery servicing.
   D. Acid-based corrosion removal compounds and airplane cleaners are used quite extensively during routine maintenance and repair. Spills do occur at times and thorough neutralizing and/or rinsing is necessary to preclude corrosion damage.
   E. Containers of acid concentrates or acid based chemicals may be part of a cargo and may be broken during loading and unloading. Spillage from such sources are usually larger in scale than spills previously mentioned. It is, therefore, advisable that the acid spillage be neutralized as soon as possible.
   F. Operators should be cognizant of the fact that acids may deteriorate nonmetallic materials such as fabrics, wood, leather, etc.

   TASK 05-51-57-002-001
2. Corrosion Removal After Acid Spills
   A. Standard Tools and Equipment
      (1) Rubber or plastic gloves
      (2) GO2057 Goggles - Safety
      (3) Face Shield
      (4) Boots
      (5) Head gear
   B. Consumable Materials
      (1) BO0334 - Bicarbonate of Soda
      (2) BO0095 Chemical - Sodium Bicarbonate (O-S-576)
      (3) GO0009 Compound - Corrosion Inhibiting, BMS 3-23, Type II
   C. Procedure

S 912-004

WARNING: ACIDS ACCIDENTLY SPILLED ON SKIN, CLOTHING OR OTHER MATERIAL SHOULD BE FLOODED IMMEDIATELY WITH CLEAN WATER. IF EYES ARE INVOLVED FLOOD WITH COPIOUS QUANTITY OF CLEAN WATER AND CONSULT A PHYSICIAN IMMEDIATELY.

(1) Take these precautions when you work with an acid spill condition:
   (a) Adequate protective clothing (rubber or plastic gloves, goggles, face shields, aprons, boots, head gear, etc.) should be worn when handling or working in acid contaminated areas.
   (b) Wash hands after using acid neutralizing treatment solution and/or materials before eating or smoking.
   (c) Waste materials, solvents, chemical solutions, wiping rags, masking materials, etc., shall be collected and disposed of safely.

S 942-002

(2) Do these steps to isolate the contaminated area:
   (a) Do not allow acid spills to spread from areas of contamination.
   (b) Using plastic sheets is advised for protection of equipment beneath battery areas. If equipment is operating, venting requirements should be maintained.
   (c) Consider protecting uncontaminated areas by taping down protective material such as plastic sheets.

S 112-003

(3) Do these steps to clean the area of an acid spillage:
   (a) If equipment is adjacent to the treatment area use plastic sheets to cover the equipment to prevent inadvertent splashing of acids or treatment fluids.
   (b) Wipe up excess fluids with cloth and discard cloth into plastic container for disposition.
   (c) Neutralize the treatment area with a 20% sodium bicarbonate solution applied with a brush or cloth swab. Particular attention should be given to faying surface joints. Pressure application may be required to flush the joint thoroughly.

      NOTE: One pound of sodium bicarbonate in 1 gallon of water will give the necessary solution.

(d) Apply the solution with a cloth, mop, brush, or sponge.
1) Make sure the solution goes into the contaminated faying surface joints.

NOTE: A pressure application of the solution can be necessary to flush the faying surface joints and some access areas fully.

(e) Apply the solution until bubbles cease in the acid/solution.

NOTE: When the bubbles cease, the acid has become neutral.

(f) Then allow the solution to remain on the surface for an additional 5 minutes after the bubbles stop.
(g) Remove the solution with mop or sponge.
(h) Flush the area with large quantities of clean water.
1) Rub the surface with a soft brush.
(i) Do a test of the cleaned area with litmus paper.

NOTE: The litmus paper should read between 7 and 8 when the area is fully cleaned.

(j) Wipe dry with clean cloths.
(k) After thoroughly dry, repair or replace damaged finishes if it is necessary. Refer to CPM 20-50-00 and CPM 20-60-00 for protective finish systems.
(l) Apply water displacing corrosion preventive compound BMS 3-23, over entire area.

NOTE: For details of application of BMS 3-23, refer to CPM 20-60-00.

ZONAL DRYER OVERHAUL - INSPECTION/CHECK

1. General
   A. The time between overhaul (TBO) for the Zonal Dryer is 22 500 dryer operating hours which corresponds to 3 years of airplane operation.
   B. A sampling program will be in progress for all maintenance actions described below in order to increase maintenance intervals. Components or details not mentioned are installed On Condition.

TASK 05-96-01-896-001

2. Maintenance Requirements
   A. Airplane System

      S 716-002
      (1) Check of fault indication lamps every A-check (500 fh).

      S 206-003
      (2) Inlet Screen inspection for dust and foreign objects every third A-check (1500 fh) or 2250 operating hours.

      S 616-004
      (3) High Efficiency-filter change every third A-check (1500 fh) or 2250 operating hours.

   B. Zonal Dryer Overhaul

      S 616-005
      (1) 3-C-check interval (15 000 fh) or 22 500 operating hours.
         (a) Fan - Overhaul
         (b) Rotor Drive Assy - Inspection/Test
         (c) Heater Element - Inspection/Test
         (d) Temp-Sensors - Inspection/Test
         (e) Rotor - Wash or Replacement (Also refer to par. A.(2) above)
         (f) Seals - Inspection/Replacement (Also refer to par. A.(3) above)
         (g) Gearbox - Inspection/Test
         (h) Bushings and Bearings - Inspection
         (i) Chassis - Inspection for Cracks