

1. General

This section provides information necessary to identify, diagnose, and correct potential problems which may occur with the wheel or brake assemblies.

2. Brake Assembly Troubleshooting

Refer to the troubleshooting chart in Table 101 for assistance in diagnosing brake related difficulties. When a correction has been identified for a particular problem, refer to the appropriate reference in either the ON-AIRCRAFT or OFF-AIRCRAFT MAINTENANCE sections of this manual, or if available, refer to individual wheel and brake maintenance manual for the specific aircraft application.

Table 101
Brake Assembly Troubleshooting

| TROUBLE | PROBABLE CAUSE | CORRECTION |
|--|---|---|
| 1. Unable to obtain sufficient hydraulic brake pressure; Excessive toe pedal travel; spongy pedal. | Air in hydraulic system. | Check for source, then bleed hydraulic system. |
| | Vent in master cylinder reservoir clogged. | Clean vent or overboard drain. |
| | Leak in system; brake, master cylinder, fittings, or lines. | Locate leak and repair. |
| | Defective master cylinder. | Replace or repair. |
| | Back plate bolts loose (not properly torqued), causing excessive brake deflection. | Torque bolts to proper value. See Torque chart in Appendix A. |
| | Excess bolt torque has caused back plate to crush cylinder, evidenced by depressions around bolt holes. | Replace cylinder and follow manufacturer's recommended torque values. |
| | Defective brake line (ballooning). | Replace. |
| | Improper adjustment of master cylinder rod length restricting the development of maximum stroke. | Adjust length per the aircraft maintenance manual. |

Table 101 - Continued
Brake Assembly Troubleshooting

| TROUBLE | PROBABLE CAUSE | CORRECTION |
|---|--|--|
| 2. Brake drag. | Piston cocked in cylinder, resulting in overheating brake and/or excessive lining wear. | Remove and repair cylinder or piston, or replace brake. |
| | Foreign matter wedged in brakes. | Locate and remove. |
| | Back pressure due to malfunction of master cylinder or parking valve. | Bleed hydraulic system and/or repair/replace master cylinder or parking valve. |
| | Water or ice in hydraulic system. | Flush and bleed hydraulic system (thaw ice first). |
| | Excessive bolt torque has caused back plate to crush cylinder, evidenced by depressions around bolt holes. | Replace cylinder and follow manufacturer's recommended torque value. |
| | Piston does not retract. | Bleed system and/or remove piston. Inspect for damage. |
| | Warped pressure plate. | Replace pressure plate or flatten to within 0.010 inch (0.254 mm). |
| | Rigid hydraulic line(s) prevents brake from floating freely. Flexible hydraulic lines are recommended. | Check free cylinder movement. Position cylinder and re-tighten fitting. |
| | Corroded anchor bolts and/or torque plate bushings. | Clean and lubricate or replace. |
| | Cocked anchor bolts and/or torque plate bushings. | Replace. |
| | Bent/cracked torque plate. | Replace. |
| | Warped brake disc - can be checked by laying a straightedge across disc face. | Replace and use caution during operation to prevent excessive energy input into brake. |
| | Out of position/stuck lining. | Repair/replace. |
| Restriction in hydraulic line. | Isolate and remove restriction. | |
| Lining not firmly seated flush against pressure/back plate. | Debur rivet hole on surface adjacent to lining. | |

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Table 101 - Continued
Brake Assembly Troubleshooting

| TROUBLE | PROBABLE CAUSE | CORRECTION |
|--------------------------------|---|---|
| 3. Rapid disc and lining wear. | <p>Dragging brakes.</p> <p>Improper conditioning of brake linings.</p> <p>Excessive rusting, scoring, or pitting of brake disc.</p> <p>Excessive back plate deflection caused by bent bolts or over torquing bolts.</p> <p>Incorrect lining and/or disc.</p> | <p>See Table 101, Trouble #2.</p> <p>See lining conditioning procedures, ON-AIRCRAFT MAINTENANCE PARA 2.b. (2)</p> <p>Clean or replace disc. Use factory chrome-plated disc where applicable.</p> <p>Check and replace bolts. Check torque per Appendix A.</p> <p>Replace with correct parts.</p> |
| 4. Brakes won't hold. | <p>Contaminated lining.</p> <p>Improper conditioning of brake linings.</p> <p>Lining worn below minimum wear limits.</p> <p>Discs worn below minimum wear limits.</p> <p>Insufficient hydraulic pressure.</p> <p>Organic brake lining carburized (overheated).</p> <p>Pressure plate contacting torque plate assembly.</p> <p>New Lining installed with old disc, Lining not seated in wear track creating partial contact with disc.</p> | <p>Replace lining.</p> <p>See lining conditioning procedures, ON-AIRCRAFT MAINTENANCE para 2.B. (2).</p> <p>Replace lining. Refer to Appendix A.</p> <p>Replace discs. Refer to Appendix A.</p> <p>See Table 101, TROUBLE #1</p> <p>Replace lining.</p> <p>Check for correct torque plate/wheel installation.</p> <p>Replace excessively worn disc.</p> |

3. Wheel Assembly Troubleshooting

Refer to the troubleshooting chart in Table 102 for assistance in diagnosing wheel related difficulties. When a correction has been identified for a particular problem, refer to the appropriate reference in either the ON-AIRCRAFT or OFF-AIRCRAFT MAINTENANCE sections of this manual, or if available refer to the specific wheel and brake maintenance manual for that equipment.

Table 102
Wheel Assembly Troubleshooting

| TROUBLE | PROBABLE CAUSE | CORRECTION |
|--|--|---|
| 1. Cracked or distorted wheel or wheel half. | <p>Hitting rocks or other hard objects during landing or takeoff.</p> <p>CAUTION: DO NOT ATTEMPT TO WELD OR REPAIR CRACKS IN WHEEL HALVES.</p> <p>Use of sharp objects to break tire bead.</p> <p>Landing with flat tire or abnormally hard landing.</p> <p>Landing in crabbing position in crosswind causing excessive side force.</p> <p>Normal fatigue failure when used beyond expected wheel life.</p> | <p>Inspect wheel using Zyglo to determine condition. Replace wheel or wheel half.</p> <p>Replace wheel or wheel half.</p> |
| 2. Damaged bearing cone. | <p>Misalignment of bearings.</p> <p>Axle nut improperly torqued.</p> <p>Foreign matter in bearing grease.</p> <p>Lack of bearing grease.</p> | <p>Replace bearing cone being sure it is properly seated in bearing bore.</p> <p>Replace and torque axle nut to aircraft manufacturer's specifications.</p> <p>Check grease seals for damage. Replace seals and be sure bearing grease is free from foreign matter.</p> <p>Replace bearings and repack with grease.</p> |
| 3. Worn or damaged grease seals. | Normal wear or improper installation. | Replace grease seals. |

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