

Cleveland

Wheels & Brakes

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SERVICE BULLETIN

40-211 MAIN WHEEL CRACK INSPECTION AND WHEEL HALF REPLACEMENT

PURPOSE: The purpose of this bulletin is to inform operators utilizing the 40-211 Main Wheel Assembly that some operators of this equipment have experienced the development of hairline cracks between the lightening holes in the wheel web areas. This bulletin provides the inspection requirements for crack identification in suspected areas, plus the procedure for wheel half replacement if required.

APPLICABILITY: DeHavilland Twin Otter Models:

DHC-6-1, -100, -200 and -300.

Those converted to Cleveland Wheels and Brakes per 199-92 Kit, STC SA1065GL.

Beech Models:

D18S, D18C, E18S, C-45G, TC-45G, C-45H, TC-45H, TC-45J, RC-45J, E18S-9700, G-18S, H-18, JRB-6, 3N, 3NM, 3TM.

Those converted to Cleveland Wheels and Brakes per 199-141 Kit, STC SA1222GL.

EFFECTIVITY:

1. Visual inspection to be performed within next ten cycles or hours, whichever comes first.
2. Tear down inspection to be performed at next tire change or phase inspection, and each subsequent tire change thereafter until wheel is retired from service.

COMPLIANCE: Mandatory.

PROCEDURE:

1. Method of visual inspection.

NOTE: Wheel removal from aircraft is not required.

- A. Jack aircraft per manual instructions, so that main wheels can be rotated freely.
- B. Wipe down and clean the hub area and web area of both inner and outer wheel halves of each wheel with MEK or appropriate cleaning solution (Ref. Figure 1). Rotate wheel as needed to gain access to the subject areas of the inner wheel half.

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- C. Carefully examine the web areas (spokes) between the lightening holes of both the inner and outer wheel halves on each wheel. Refer to Figure 1 for area locations.

NOTE: Spot check (Ref. Table 1) or equivalent can be used while wheel is on aircraft, in areas of concern, if visual inspection is inconclusive.

- D. If cracks are found, the affected wheel shall be immediately removed from service and retrofit accomplished with Kit 199-18100 per Wheel Retrofit section 3. If suspected crack cannot be verified with spot check, tear down inspection per section 6.2 is recommended.

2. Tear down inspection

- A. Dismount and disassemble both main wheels per Cleveland Maintenance Instructions, sections 12.1.1.1 thru 12.1.1.4

NOTE: Do not remove wheel bearing cups.

- B. Clean all wheel halves with a suitable solvent and dry with a lint free cloth.

NOTE: Strip topcoat and primer if required per penetrant manufacturer's recommended procedures.

- C. Penetrant inspect each wheel half, noting in particular the web areas (spokes) between the lightening holes, as shown in Figure 1.

NOTE: Eddy Current Techniques may also be used if equipment and a qualified operator are available.

- D. Recommended penetrant inspection materials/suppliers are listed in Table 1.

Type	Penetrant	Developer	Supplier
Flourescent	Zyglo ZL-16	Zyglo ZP-13 (wet) optional	Magnaflux Corpoation 7310 West Lawrence St. Chicago, IL. 60656
	Penetrex ZL-2A with emulsifier ZE-4	Penetrex ZP-4 (dry) or ZP-13 optional	
Red Dye	Spot Check	Spot Check	Turco Products Division of Purex Corp. P.O.Box 6200 Carson, CA 90749
	Dy-Check	Dy-check	
	Met-L-Chek	Met-L-Chek	Met-L-Chek Company 1639 Euclid Street Santa Monica. CA 90404

TABLE 1

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- E. If any crack indication is found in either wheel half of a particular wheel, that wheel (both Wheel Halves) shall be retrofitted per Wheel Retrofit section 3.
- F. If crack indications are not found, reassemble and remount wheel on aircraft per maintenance manual instructions and make a log book entry referencing this activity.

3. Wheel retrofit

- A. Cleveland Retrofit Kit 199-18100 must be used to retrofit one 40-211 main wheel to become improved wheel model 040-21101. This kit contains all parts and instructions as needed to retrofit one wheel assembly.

NOTE: Do not attempt to intermix Wheel Half Sub-Assemblies 161-13301 and 162-12401 with 161-13300 and 162-12400 Sub-Assemblies.

- B. Following is a list of parts contained in Kit 199-18100:

<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
161-13301	Inner Wheel Half Sub-Assembly	1
162-12401	Outer Wheel Half Sub-Assembly	1
095-73200	Washers (Install under Nut)	9
166-09400	Nameplate (Installed on Outer Wheel Half Assembly)	1

NOTE: Existing wheel hardware, seals, hubcap, bearings, snaprings and brake disc to be reused provided each is in a serviceable condition. Grease dam P/N 110-09700 is NOT required in 040-21101 wheel assembly.

Shaded area represents Wheel Surfaces to be inspected per 1C and 2C

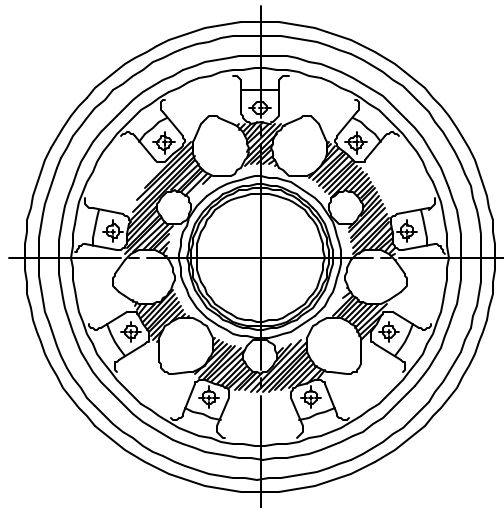


Figure 1