

# SERVICE BULLETIN



**FUJI HEAVY INDUSTRIES LTD.**

JCAB APPROVED

HEAD OFFICE ; SUBARU BLDG.  
SHINJUKU, TOKYO, JAPAN

NO. 200-001

DATE April 18, 1977

(SUPERSEDES NO. )

REV.

DATE

(SUPERSEDES NO. )

REASON

1. SUBJECT : Introduction of McCauley SB 121  
(Modification, Inspection and Replacement of Propeller Hub. )
2. AIRCRAFT AFFECTED:  
FA-200-180 Aircraft (except - 180 A0).  
Aircraft equipped with oil filled hub propeller are not affected by this service bulletin.
3. PRIORITY: Mandatory action imposed by McCauley.
4. REASON: To advise operators of McCauley Service Bulletin 121, dated February 15, 1977, concerning modification, inspection, and replacement of propeller hub. The bulletin is reprinted herewith in its entirety.
5. DESCRIPTION:  
See the reprinted McCauley SB 121.
6. ACCOMPLISHMENT:  
See McCauley SB 121 for detailed instruction.
7. APPROVAL: JCAB Approval (No.-TOKYO-51-025) March 28, 1977
8. PARTS REQUIRED:  
See McCauley SB 121
9. SPECIAL TOOL:  
See McCauley SB 121
10. WEIGHT AND BALANCE:  
Weight increases 3.1 lbs after modification from original propeller to oil filled hub propeller.
11. REFERENCES:  
McCauley SB 121 dated February 15, 1977
12. DETAILED INSTRUCTIONS:  
See McCauley SB 121 for detailed procedures.

**AIRCRAFT DIVISION**

680 NISHIHARACHO UTSUNOMIYA TOCHIGI JAPAN 〒320  
TEL 0286 (58) 1111 TELEX 720 3522 176

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McCauley Accessory Division  
Cessna Aircraft Company

SERVICE BULLETIN 121

DOA APPROVED

FEBRUARY 15, 1977

MANDATORY ACTION

TO: FAA Approved Propeller Repair Stations, Mooney Aircraft Corp.  
and Fuji Heavy Industries, Ltd.

SUBJECT: Propeller Hub Modification, Inspection, and Replacement

PROPELLER MODELS AFFECTED: 2D34C53-\* and B2D34C53-\*

\*Hub models are affected regardless of change letters stamped at the end of the model designation except "oil filled" versions of affected models (see Table I for specific affectivity).

AIRCRAFT MODELS AFFECTED: Any aircraft with Lycoming O-360 or IO-360 series engine installed including, but not limited to, Fuji FA-200-180, Mooney M20C and Mooney M20D aircraft.

SERVICE MANUAL AFFECTED: 720415

CONDITION:

Since the introduction of shot peening of hub retention threads in 1970, incidents of hub cracks and failures has substantially declined. However, a few recent incidents indicate that the increased fatigue strength from shot peening has not totally eliminated hub cracking. Although the source of the problem may involve improper operation and maintenance of the engine and propeller, treatment of the problem is necessary. On affected propellers, additional inspections (prior to overhaul) are deemed necessary until propellers are modified to the recently introduced "oil filled hub" which provides improved lubrication and servicability as well as a "built-in" means of crack detection.

The corrective action of this bulletin is expected to be required by an FAA Airworthiness Directive.

1840 HOWELL AVE.  
Area Code 513 263-3541

BOX 7, ROOSEVELT STA.  
Telex 28-8092

DAYTON, OHIO 45417  
Cable Address McCauley

WORLD'S LARGEST MANUFACTURER OF PROPELLERS

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APPENDIX 1 OF 4

CORRECTIONS:

One or more of the following corrections may be necessary depending on the criteria specified under Compliance section of this bulletin.

(1) External inspection of hub.

Remove spinner and inspect all external surfaces of hub for cracks using dye penetrant method. The propeller need not be disassembled or removed from aircraft for this inspection, which can be performed by an A & P mechanic. Replace any hub found cracked before further flight. Make a logbook entry to indicate completion of external inspection.

(2) Internal and external inspection of hub.

Remove propeller from aircraft and disassemble sufficiently to inspect all internal and external surfaces of hub for cracks using dye penetrant method. This inspection must be performed by an FAA approved propeller repair station. Replace any hub found cracked before further flight. Make a logbook entry to indicate completion of internal and external inspection.

(3) Modification to "oil filled" hub.

Modification to the oil filled configuration during major disassembly or overhaul must be accomplished by an FAA approved propeller repair station. Procedures for this modification are specified in Supplement #1 to McCauley Constant Speed Service Manual 720415. Make a logbook entry to indicate completion of modification.

NOTE

Modification is authorized only for approved shot peened hubs (i.e. comply with Service Bulletin 88 and Service Manual requirements).

COMPLIANCE:

Compliance is mandatory after April 15, 1977 unless required earlier by FAA Airworthiness Directive. (The April 15 date for compliance is specified in order to allow time for repair stations to order parts and become familiar with modification procedures.)

If total time in service of propeller hub is:

- (A) Less than 500 hrs. - No action is required.
- (B) 500 hrs. to 1200 hrs. - Externally inspect (Correction #1) propeller hub within next 25 hours time in service and repeat inspection every 100 hours time in service from last inspection.
- (C) 1200 hrs. or more OR IF SERVICE HISTORY IS UNKNOWN - Internally and externally inspect (Correction #2) propeller hub within next 25 hours time in service, unless previously accomplished within last 300 hours, and repeat inspection every 300 hours time in service from last inspection.

All above inspection requirements may be discontinued once the propeller has been modified to "oil filled" configuration as specified in Correction #3 of this bulletin. Due to the expense and inconvenience of repetitive inspection, this modification is required at propeller overhaul and may also be performed while propeller is disassembled for internal inspection (Correction #2).

SPECIAL NOTE:

Two other McCauley Service Bulletins, 77B and 115, currently referenced in FAA Airworthiness Directive 75-24-12, may also be applicable to affected propeller models as follows:

1. B2D34C53-N with hub serial numbers from 705516 to 705560 inclusive

Service Bulletin 115

If total time in service exceeds 975 hours, hub replacement is required within next 25 hours of service. If total number of hours of service is unknown, it must be assumed to have in excess of 975 hours service.

2. All 2D34C53-"blank" and 2D34C53-A hubs

Service Bulletin 77B

- a. For propellers involved in a ground strike, replace or rework hub within next 25 hours of service after the effective date of 28 November 1969 (original Service Bulletin 77).
- b. All other propellers, replace or rework hub within next 100 hours of service after the effective date of 11 August 1975 (Service Bulletin 77B).

TABLE I

Hub Stamping*	Summary of inspections required based on total hours in service of propeller hub			
	0-500	500-1200	Over 1200	Unknown
2D34C53-"blank"	NA	E	IE	IE
2D34C53-A	NA	E	IE	IE
B2D34C53-"blank"	NA	E	IE	IE
B2D34C53-A	NA	E	IE	IE
2D34C53 or B2D34C53-J	NA	E	IE	IE
-K	NA	E	IE	IE
-N	NA	E	IE	IE
-XN	NA	E	IE	IE
-AM	NA	E	IE	IE
-JM	NA	E	IE	IE
-KM	NA	E	IE	IE
-XMN	NA	E	IE	IE
-AMN	NA	E	IE	IE
-JMN	NA	E	IE	IE
-KMN	NA	E	IE	IE
-MN	NA	E	IE	IE
-N	NA	E	IE	IE
-XMNO	NA	NA	NA	NA
-AMNO	NA	NA	NA	NA
-JMNO	NA	NA	NA	NA
-KMNO	NA	NA	NA	NA
-MNO	NA	NA	NA	NA
-NO	NA	NA	NA	NA
-O	NA	NA	NA	NA

Oil Filled\*\*

See Compliance section of this bulletin for specific requirements.

## CODE:

NA - No Action Required

E - External Inspection - 100 Hour Intervals

IE - Internal and External Inspection - 300 Hour Intervals

\*If any hub is found with letter changes not listed, contact McCauley Service Department for disposition.

\*\*The oil filled hub concept basically is a sealed hub which is partially filled with oil mixed with red dye. This oil is isolated (independent of engine oil) replacing grease as the internal lubricating medium. Oil filled propellers are identified by a letter change ("O") in the model designation. They are also identifiable by a filler plug in the hub which is unique to the oil filled models.