March 13, 1978

SE78-12

SUBJECT: PROPELLER HUB INSPECTION AND MODIFICATION

AIRCRAFT APPLICABILITY: Model 185, 206, 207 and 210 Series Aircraft equipped with McCauley D2A34C58 Series Propeller Serial numbers........ 185-0001 thru 18503153 ('61 thru '76 models) 206-0001 thru U20604074 ('64 thru '77 models) P206-0001 thru P206-0306 ('65 and '66 models) Turbo U206-0438 thru Turbo U20604074 ('66 thru '77 models) Turbo P206-0161 thru Turbo P206-0306 ('66 models) 20700001 thru 20700362 ('69 thru '76 models) 21057001 thru 21058510 ('60 thru '64 models)

Attached is an important McCauley Service Bulletin #130 which calls for periodic internal and external propeller hub inspections on Model 185 and 200 Series aircraft.

The basic requirements contained in McCauley Bulletin #130 are as follows:

On Non Shot Peened Hubs - Requires external inspection every 100 hours on propellers with 500 to 1200 hours time in service. External and internal hub inspection every 300 hours on propellers with 1200 or more hours time in service.

On Shot Peened Hubs - Requires external and internal inspection within next 100 hours of operation on propellers with 1200 to 2400 hours time in service. External and internal inspection every 300 hours on propellers with 2400 or more hours time in service.

It should be noted that the inspection requirements are not applicable when these propellers are modified to the "oil filled" configuration. Parts and instructions required for modifying propellers to the "oil filled" configuration are covered in Service Letter SE77-4.

This bulletin calls for mandatory action, and it is important that service personnel study the bulletin carefully and establish procedures to handle the requirements of this program.

* * * * *

(Owner Notification System - No. 2)

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THERE ARE MORE CESSNAS FLYING THAN ANY OTHER MAKE
McCauley Accessory Division
Cessna Aircraft Company

SERVICE BULLETIN 130

DOA APPROVED JANUARY 20, 1978

MANDATORY ACTION

TO: FAA Approved Propeller Repair Stations and Cessna Aircraft Company

SUBJECT: Propeller Hub Inspection, Modification and Replacement

PROPELLER MODELS AFFECTED: D2A34C58-*

*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 model affectivity).

AIRCRAFT MODELS AFFECTED:

SERVICE MANUALS 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 installations, additional inspections are deemed necessary until propellers are modified to the "oil filled hub" which provides improved lubrication and serviceability 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.

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). Also, all F2A34C58 model hubs must be modified to D2A34C58 per Service Bulletin 110.
COMPLIANCE:

Different compliance criteria are used depending on whether the hub is shot peened or not (see Table I for identification).

(A) NON-SHOT PEENED HUB - If total time in service of propeller hub is:

1. Less than 500 hrs. - No action is required.

2. 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.

3. 1200 hrs. or more OR IF SERVICE HISTORY IS UNKNOWN -
   a. Hub models D2A34C58-"blank" and -A
      Replace hub with later approved model within next 25 hours time in service. See Table I for reference. (This replacement has been previously required at overhaul per Service Bulletin 88 dated Nov. 6, 1970, and Service Manual 720415.)

   b. Hub models D2A34C58-B, -J, -K, and -L
      Internally and externally inspect (Correction #2) propeller hub within next 50 hours time in service, unless previously accomplished within last 300 hours, and repeat inspection every 300 hours time in service from last inspection. (Hub shot peening required at overhaul per Service Bulletin 88 dated November 6, 1970, and Service Manual 720415.)

(B) SHOT PEENED HUB - If total time in service of propeller hub is:

1. Less than 1200 hours - No action is required.

2. 1200 hrs. to 2400 hrs. - Internally and externally inspect (Correction #2) propeller hub within next 100 hours time in service, unless previously accomplished within last 1200 hrs.

3. 2400 hrs. or more OR IF SERVICE HISTORY IS UNKNOWN -
   Internally and externally inspect (Correction #2) propeller hub within next 50 hrs. time in service, unless previously accomplished within last 300 hrs., and repeat inspection every 300 hours time in service from last internal 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).
# TABLE I

<table>
<thead>
<tr>
<th>Hub Stamping*</th>
<th>Hub Shot Peened</th>
<th>Summary of inspections required based on Total hours in service of propeller hub</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0-500</td>
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<tr>
<td>D2A34C58-&quot;Blank&quot;</td>
<td>No</td>
<td>NA</td>
</tr>
<tr>
<td>A</td>
<td>No</td>
<td>NA</td>
</tr>
<tr>
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<tr>
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</tr>
</tbody>
</table>

See Compliance section of this bulletin for specific requirements

**CODE:**

- NA - No Action Required
- E - External Inspection - 100 Hour Intervals
- R - Hub Replacement Required
- IE-300 - Internal and External Inspection - 300 Hour Intervals
- IE-1200 - Internal and External Inspection - 1200 Hour Intervals

*If any hub is found with letter changes not listed, contact McCauley Service Department for disposition. Hubs stamped -A, -B, -J, -K, or -L must be shot peened at overhaul per Service Bulletin 88.

**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.