

SERVICE BULLETIN



March 13, 2013

SB137AF

TITLE

REVISED TIME BETWEEN OVERHAUL (TBO)

TO:

FAA-Approved Propeller Repair Stations, Aircraft Manufacturers, Owners and Operators

MODELS AFFECTED

All "Threaded" C1 thru C98 Propeller Models

PUBLICATIONS AFFECTED

710930, and 720415

REASON

This revision removes all information applicable to accumulators, governors, fixed pitch propellers and "threadless" model C201 thru C1105 model propellers.

NOTE: For McCauley governors, accumulators, fixed pitch propellers and "threadless" model C201 thru C1105 model propellers, refer to the current revision to the McCauley MPC26, Owner/Operator Information Manual for McCauley's mandatory specified time between overhaul for these propellers, governors, and accumulators.

Changes to this service bulletin, with the exception of editorial and formatting changes, are indicated by vertical lines in the margin.

DESCRIPTION

Service Bulletin 137AF replaces Service Bulletin 137AE dated February 17, 2010.

APPROVAL

FAA approval has been obtained on technical data in this publication that affects product type design.

ACCOMPLISHMENT INSTRUCTIONS

1. General

- A. The following pages show McCauley's mandatory specified time between overhaul for affected propellers. Specifications are based on hours of operation and calendar time, whichever occurs first. The starting point for the calendar limit is the date of first installation on an engine (not from date of

Original Issue: December 28, 1979

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TO OBTAIN SATISFACTORY RESULTS, PROCEDURES SPECIFIED IN THIS SERVICE INFORMATION MUST BE ACCOMPLISHED IN ACCORDANCE WITH ACCEPTED METHODS AND PREVAILING GOVERNMENT REGULATIONS. MCCAULEY PROPELLER SYSTEMS CANNOT BE RESPONSIBLE FOR THE QUALITY OF WORK PERFORMED IN ACCOMPLISHING THIS SERVICE INFORMATION.

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manufacture or overhaul). Date of manufacture or overhaul is applicable when determining long term storage inspections. If the propeller has been removed from service, the TBO calendar limit still applies, not long term storage.

NOTE: Calendar month is the period of time from the first day of a month to the last day of the month. When the term calendar month is used, compliance can be achieved at any time during the month, up to and including the last day of the month. For Example: a propeller with a 60 calendar month inspection interval is inspected and approved upon any given day of the month. This propeller will become due for inspection upon the last day of the same month, 60 months later.

- B. All deviations from published TBOs must be approved by your local Regulatory Authority with a recommendation from McCauley.
- C. If the propeller is in storage in excess of two years, additional inspections are required. Once installed on an aircraft the propeller calendar limit is not interrupted by subsequent removal and/or storage.
- D. Propeller overhaul should, as much as practical, coincide with engine overhaul. For example, in a case where propeller TBO is 1500 hours and engine TBO is 1400 hours, the propeller should be overhauled at the same time as the engine. This is appropriate as long as neither TBO limit is exceeded.

CAUTION: REVIEW APPLICABLE FAA AIRWORTHINESS DIRECTIVES OR McCAULEY SERVICE BULLETINS. THESE MAY REQUIRE COMPLIANCE PRIOR TO TBO.

- E. TBO specifications are based on normal aircraft with normal and continuous usage. Flight time and calendar limit must not be the only factors considered in determining when a propeller needs to be overhauled. Factors such as operating conditions or environment often demand that a propeller, governor, or accumulator be overhauled prior to TBO. Even though a propeller may be operating normally and have a good external appearance when the TBO flight time or calendar limit is reached, operation beyond the specified TBO limits is not permitted.

2. Long Term Storage of Controllable Pitch Propellers

- A. The following is applicable to new and overhauled propellers prior to entering service (engine installation) or at any time propeller is removed from service. Storage time is determined from date of manufacture, overhaul, or removal from aircraft.
 - (1) Storage must be in a clean and dry environment, preferably in the original shipping carton and above ground level, to minimize exposure to dirt and moisture.
 - (2) If storage period exceeds 2 years before entering service or returning to service perform the following inspection:
 - (a) For all propeller models, inspect externally for damage and corrosion. Inspection may be accomplished by an A & P mechanic or international equivalent. Make a logbook entry of compliance with Service Bulletin 137 latest version.
 - (b) For non-oil-filled propeller models or propellers stored with one or more propeller blades removed, remove propeller cylinder, inspect for internal corrosion and signs of deterioration, and repair as necessary. This must be accomplished only by a FAA approved propeller repair station or international equivalent in accordance with the appropriate propeller service manual. Make a logbook entry of compliance with Service Bulletin 137 latest version.
 - (3) For all propeller models, If storage period exceeds five (5) years, before entering service or returning to service perform the following inspection and parts replacement:
 - (a) Disassemble as necessary to replace all rubber seals and lubricants. Total disassembly (such as removing ferrules from blades) is not required unless evidence of corrosion warrants further disassembly. This must be accomplished only by a FAA approved propeller repair station or international equivalent in accordance with the appropriate

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propeller service manual. Make a logbook entry of compliance with Service Bulletin 137 latest version.

- (b) Inspect parts for damage and corrosion, repair/replace parts as necessary. Work must be accomplished only by a FAA approved propeller repair station or international equivalent in accordance with the appropriate propeller service manual. Make a logbook entry of compliance with Service Bulletin 137 latest version.

3. Propeller Models

- A. The propeller model designation is impression stamped on the propeller hub. Change letters are frequently stamped at the end of the model designation (e.g. 2A34C50-BM). These letters indicate engineering changes and/or previous overhaul modifications. In Table 1, unless specific change letters are shown, the overhaul frequency note applies to all propellers of that model, regardless of change letters. Use the highest letter stamped after hub model number to determine frequency of overhaul. (Refer to Step 5.)

Example : Propeller model 2A36C66-ALMOR

'R' is the highest letter = TBO note C. applies

Propeller model 2A36C66-AEF

'F' is the highest letter = TBO note A. applies

Table 1: Propeller Models

Model Designation	Overhaul Frequency Note
2A36C1	A.
2B36C7	B.
2D34C8	B.
2D34C9	B.
2AF31C10	A.
2D34C11	A.
B2D34C11	A.
2D36C14	A.
B2D34C15	A.
B2D34C16	A.
2A36C18	A.
2A31C21	A.
2A34C22	A.
2A36C23	A.
2AF36C26	A.
2D36C28	A.
2A36C29	A.
D2AF34C30	A.
B2A36C31	A.

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Model Designation	Overhaul Frequency Note
D2A36C31	A.
C2A36C32	A.
D2A36C33	A.
D2A34C34	A.
D3AF32C35	A.
2AF36C38	A.
2AF36C39	A.
D2AF34C41	A.
D2AF34C42	A.
2A36C43	A.
D2A36C45	A.
D2AF34C46	A.
D2AF36C48	A.
D2A34C49	A.
2A34C50	A.
D2AF34C52	A.
2D34C53-less than O	A.
2D34C53-O or higher	C.
B2D34C53-less than O	A.
B2D34C53-O or higher	C.
D2AF34C54	A.
2AF34C55-less than O	A.
2AF34C55-O or higher	C.
D3AF34C56	A.
B2E34C57	A.
D2A34C58-less than O	A.
D2A34C58-O or higher	C.
F2A34C58	A.
D2AF34C59	A.
D2AF34C60	A.
D2AF34C61-less than O	A.
D2AF34C61-O or higher	C.
D2AF34C65-less than O	A.
D2AF34C65-O or higher	C.
2A34C66-less than P	A.

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Model Designation	Overhaul Frequency Note
2A34C66-P or higher	C.
D2A34C67	A.
2AF36C68	A.
B2D34CT69	A.
E2A34C70-less than P	A.
E2A34C70-P or higher	C.
D2AF34C71	A.
3AF32C72-less than N	A.
3AF32C72-N or higher	C.
E2A34C73-less than P	A.
E2A34C73-P or higher	C.
3AF34C74	A.
3AF32C75	A.
3A32C76	A.
D3A32C77	A.
D2A34C78-less than P	A.
D2A34C78-P or higher	C.
D3A32C79	A.
D3AF32C80-less than N	A.
D3AF32C80-N or higher	C.
D2AF34C81-less than O	A.
D2AF34C81-O or higher	C.
2A36C82	A.
3AF34C86	A.
3AF32C87-less than N	A.
3AF32C87-N or higher	C.
D3AF32C87-less than N	A.
D3AF32C87-N or higher	C.
D3A32C88	A.
2AF36C89	A.
D3A32C90-less than N	A.
D3A32C90-N or higher	C.
D2AF34C91	A.
3AF34C92	A.
SAF32C93-less than N	A.

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Model Designation	Overhaul Frequency Note
3AF32C93-N or higher	C.
D2A34C98	A.

4. Overhaul Frequency Notes

A. **1200 hours or 60 calendar months**, whichever occurs first, except:

- (1) All C1, C14, C18, C28, C29, C31, C32, C33 and C45 propellers with plain (no prefix or suffix) blade serial numbers (00000 thru 21297) - the overhaul frequency is 1000 hours or 60 calendar months, whichever occurs first.
- (2) All 2A36C23, D2AF34C30, D3AF32C35, 2AF34C55, 3AF32C75, 3A32C76 and 2A36C82 propellers with hub serial number 71XXXX and higher - the overhaul frequency is 1500 hours or 60 calendar months, whichever occurs first.

B. **1000 hours or 60 calendar months**, whichever occurs first, except:

- (1) All 2D34C9 propellers with hub serial number 71XXXX and higher - the overhaul frequency is 1500 hours or 60 calendar months, whichever occurs first.

C. **1500 hours or 60 calendar months**, whichever occurs first, except:

- (1) Agricultural aircraft installations - the overhaul frequency is 1200 hours or 60 calendar months, whichever occurs first.

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5. Time Between Propeller Overhaul

- A. The following pages show McCauley's mandatory specified time between overhaul for propellers. These specifications are based on hours of operation and calendar time, whichever occurs first. The starting point for the calendar limit is the date of first installation on an engine (not from date of manufacture or overhaul). Date of manufacture or overhaul is applicable when determining long term storage inspections. If the propeller has been removed from service, the TBO calendar limit still applies, not long term storage.

NOTE: Calendar month is the period of time from the first day of a month to the last day of the month. When the term calendar month is used, compliance can be achieved at any time during the month, up to and including the last day of the month. For Example: a propeller with a 60 calendar month inspection interval is inspected and approved upon any given day of the month. This propeller will become due for inspection upon the last day of the same month, 60 months later.

- B. All deviations from published TBOs must be approved by your local Regulatory Authority with a recommendation from McCauley.
- C. If the propeller is in storage in excess of two years, additional inspections are required. Once installed on an aircraft, the propeller calendar limit is not interrupted by subsequent removal and/or storage.
- D. Propeller overhaul should, as much as practical, coincide with engine overhaul. For example, in a case where propeller TBO is 1500 hours and engine TBO is 1400 hours, the propeller should be overhauled at the same time as the engine. This is appropriate as long as neither TBO limit is exceeded.

CAUTION: Review applicable FAA Airworthiness Directives or McCauley Service Bulletins. These may require compliance prior to TBO.

- E. TBO specifications are based on normal aircraft with normal and continuous usage. Flight time and calendar limit must not be the only factors considered in determining when a propeller needs to be overhauled. Factors such as operating conditions or environment often demand that a propeller, governor, or accumulator be overhauled prior to TBO. Even though a propeller, governor, or accumulator may be operating normally and have a good external appearance when the TBO flight time or calendar limit is reached, operation beyond the specified TBO limits is not permitted.
- F. Propeller Models.
- (1) The propeller model designation is impression stamped on the propeller hub. Change letters are frequently stamped at the end of the model designation (e.g. 3A32C406-AD). These letters indicate engineering changes and/or previous overhaul modifications. In Table 1, unless specific change letters are shown, the overhaul frequency note applies to all propellers of that model, regardless of change letters. Use the highest letter stamped after hub model number to determine frequency of overhaul. Refer to Table 601.

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Example : Propeller model 3A32C406-AD
 'D' is the highest letter = TBO note T. applies
 Propeller model 3A32C406-B
 'B' is the highest letter = TBO note S. applies

Table 601. Propeller Models

Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note
2A34C201-less than C	C.	2A34C201-C or higher	E.	2D34C202	D.
2A34C203-less than C	D.	2A34C203-C or higher	E.	C2A34C204-less than C	D.
C2A34C204-C or higher	E.	B2A34C205	A.	B2D34C206	D.
B2D34C207	D.	B2D34C208	D.	2A34C209-less than C	D.
2A34C209-C or higher	E.	2A34C210	D.	B2D34C211	D.
B2D34C212	D.	B2D34C213	D.	B2D34C214	D.
2D34C215	D.	2A34C216	D.	B2D34C217	D.
B2D34C218	D.	B2D34C219	D.	B2D34C220	D.
2A34C221	D.	2A37C223-less than C	C.	2A37C223-C or higher	E.
B2D37C224	D.	B2A34C225	D.	2A34C227-less than C	D.
2A34C227-C or higher	E.	B2A37C228	A.	B2D37C229	D.
D2A37C230	E.	D2A37C231	E.	2A37C232	E.
E2A37C233	E.	E2A37C234	E.	B2D34C235	E.
C2D37C236	E.	B2A37C238	E.	2A34C239	E.
2A34C240	D.	2A34C241	E.	D2AF34C301	D.
D2AF34C302	D.	D2AF34C303	D.	D2AF34C304	D.
D2AF34C305-less than B	A.	D2AF34C305-B or higher	D.	D2AF34C306	D.
D2AF34C307	D.	D2AF34C308	D.	D2AF34C310	D.
D3A34C401	D.	D3A34C402	D.	D3A34C403	D.
D3A34C404	D.	B3D34C405	D.	3A32C406-less than D	S.
3A32C406-D or higher	T.	B3D32C407	D.	D3A32C408	A.

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Table 601. Propeller Models (continued)

Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note
D3A32C409-less than D	S.	D3A32C409-D or higher	T.	D3A36C410	D.
D3A32C411	D.	B3D32C412	D.	B3D34C413	D.
B3D32C414	D.	C3D36C415	D.	B3D36C416	D.
B3D32C417	D.	3A32C418	D.	B3D32C419	D.
D3A34C420-less than D	D.	D3A34C420-D or higher	E.	B3D34C421	D.
3A34C422	D.	3A34C423-less than D	D.	3A34C423-D or higher	E.
B3D36C424	D.	B3D36C427	D.	B3D36C428	D.
B3D36C429	D.	D3A36C430	E.	B3D36C431	E.
B3D36C432	E.	B3D36C433	E.	3A36C434	E.
D3A36C435	E.	D3A36C436	E.	B3D36C442	E.
D3A34C443	E.	D3A34C444	E.	D3A34C447	E.
3FF32C501	D.	3AF34C502	D.	3AF34C503	D.
3AF32C504	D.	3AF32C505	D.	3AF32C506	D.
3AF32C507	D.	3AF32C508	D.	3AF32C509	D.
3AF37C510	D.	3AF32C511	D.	3AF32C512	D.
3AF36C514	D.	3AF32C515	D.	3AF37C516	D.
3AF32C521	D.	3AF32C522	D.	3AF32C523	D.
3AF32C524	F.	3AF32C525	D.	B3DF36C526	F.
B3DF36C527	F.	3AF32C528	F.	3FF34C529	V.
3GFR34C601	G.	3GFR34C602	G.	4HFR34C652	H.
4HFR34C653	O.	4HFR34C661	H.	4HFR34C662	H.
4HFR34C663	L.	4HFR34C664	H.	4HFR34C665	K.
3GFR34C701	G.	3GFR34C702	G.	3GFR34C703	I.
3GFR34C704	G.	4HFR34C754	G.	4JFR34C758	G.
4HFR34C762	G.	4HFR34C763	G.	4HFR34C764	H.
4HFR34C766	G.	4HFR34C768	H.	4HFR34C769	H.
4HFR34C771	H.	4HFR34C773	H.	4HFR34C774	G.
4HFR34C775	I.	4HFR34C778	G.	5JFR36C1003	F.
4HFR34C779	H.	B5JFR36C1101	M.	C5JFR36C1102	M.

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Table 601. Propeller Models (continued)

Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note	Model Designation	Over-haul Frequency Note
5HFR34C1008	H.	C5JFR36C1104	N.	5HFR34C1105	H.
B5JFR36C1103	N.				
Fixed Pitch Propellers	P.	All Propeller Governors	Q.	All Propeller Accumulators	R.

NOTE

- A. 1200 hours or 60 calendar months, whichever occurs first.
- B. 1000 hours or 60 calendar months, whichever occurs first.
- C. 1500 hours or 60 calendar months, whichever occurs first, except:
 - Agricultural aircraft installations - the overhaul frequency is 1200 hours or 60 calendar months, whichever occurs first.
- D. 2000 hours or 72 calendar months, whichever occurs first, except:
 - Agricultural aircraft installations - the overhaul frequency is 1200 hours or 60 calendar months, whichever occurs first.
 - Aerobatic installations - the overhaul frequency is 1000 hours or 72 calendar months, whichever occurs first.
- E. 2400 hours or 72 calendar months, whichever occurs first.
- F. 3000 hours or 72 calendar months, whichever occurs first.
- G. 3500 hours or 72 calendar months, whichever occurs first.
- H. 5000 hours or 72 calendar months, whichever occurs first.
- I. 4000 hours or 72 calendar months, whichever occurs first.
- J. 2000 hours or 72 calendar months, whichever occurs first.
- K. 5000 hours or 72 calendar months, whichever occurs first. 10,000 hour life limit on propeller blades and hub.
- L. 5000 hours or 72 calendar months, whichever occurs first. 16,000 hour life limit on propeller blades.
- M. 6000 hours or 60 calendar months, whichever occurs first.
 - The hub assembly of any B5JFR36C1101 or C5JFR36C1102 propeller that has never operated on a water-methanol assist Jetstream 4100 aircraft -- Replace 6,000 hours.
 - The hub assembly of any B5JFR36C1101 or C5JFR36C1102 propeller that is operating on, or has ever operated on, a water-methanol assist Jetstream 4100 aircraft -- Replace 6000 hours.
 - All 114GCA-0 and L114GCA-0, blades are life limited at 3,500 hours.
- N. 5000 hours or 60 calendar months, whichever occurs first.
 - The hub assembly of any B5JFR36C1103 or C5JFR36C1104 propeller that has never operated on a water-methanol assist Jetstream 4100 aircraft -- Replace 6,000 hours.
 - The hub assembly of any B5JFR36C1103 or C5JFR36C1104 propeller that is operating on, or has ever operated on, a water-methanol assist Jetstream 4100 aircraft -- Replace 6000 hours.
 - All 114HCA-0 and L114HCA-0 propeller blades are life limited at 3,500 hours.

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- O. *5000 hours or 72 calendar months, whichever occurs first.*
- Agricultural aircraft installations - the overhaul frequency is 2000 hours or 60 calendar months, whichever occurs first.
 - Only for L106FA-0 propeller blades used in the 4HFR34C653 propeller assemblies or blades that have been installed on Jetstream Series 3200 aircraft or history unknown; Propeller blades without change letter "A" must be retired from service before December 1, 2001 or upon reaching 2400 flight hours after August 1, 2000 or 16,000 hours time since new, whichever occurs first. Blades with change letter "A" are life limited to 16,000 hours.
- P. *Fixed pitch propellers - 2000 hours or 72 calendar months which ever occurs first**. Additionally, the propeller mounting bolt torque should be checked at least once per year. Propeller mounting bolts must be magnetic particle inspected in accordance with ASTM E-1444 or liquid penetrant inspected in accordance with ASTM E-1417 or replaced at every overhaul. Propeller mounting bolts must be replaced whenever the propeller is involved in a blade strike as defined in Necessary Actions Following Object Strike of Stationary Propeller, Blade Strike of Rotating Propeller, Bird Strike, or Sudden Engine Stoppage .
- *For 1A170E/JHA[XXXX] propellers only, installed on Aircraft Operating as Pilot Schools in accordance with 14 CFR, Part 141, and all aircraft with 2000 or more cycles for every 1000 flight hours must be inspected in accordance with Service Bulletin 240[X] every 1000 hours or 72 calendar months whichever occurs first.
 - *For 1A103/TCM[XXXX] propellers only, the overhaul frequency is every 1500 hours of operation or 72 calendar months, whichever occurs first. All propellers with 1500 or more hours total time in service must be inspected in accordance with Alert Service Bulletin 221[X] every 750 hours of operation or 36 calendar months whichever occurs first.
- Q. *All Propeller Governors - 2000 hours or 60 calendar months, whichever occurs first.*
- R. *All Propeller Accumulators - 1800 hours or 60 calendar months, whichever occurs first.*
- S. *2000 hours or 72 calendar months, 10,000 hour life limit on blades and hub, except:*
- Aerobatic installations - the overhaul frequency is 1000 hours or 72 calendar months, whichever occurs first. 10,000 hour life limit on blades and hub.
- T. *2400 hours or 72 calendar months, whichever occurs first. 10,000 hour life limit on blades and hub, except:*
- Aerobatic installations - the overhaul frequency is 1500 hours or 72 calendar months, whichever occurs first. 10,000 hour life limit on blades and hub.
- U. For 4HFR34C755 propellers, comply with McCauley Service Bulletin 175, Converting Propeller Model 4HFR34C755 to a 4HFR34C754, then use the overhaul frequency for a 4HFR34C754 propeller.
- V. *3000 hours or 72 calendar months, whichever occurs first, except;*
- Agricultural aircraft installations - the overhaul frequency is 1200 hours or 60 calendar months, whichever occurs first.