

Federal Aviation Administration, Fairbanks Flight Standards District Office

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AIRWORTHINESS NEWSLETTER

For Inspection Authorization Holders, A&Ps and Repairmen

Larry E. Dalrymple—Manager

James H. Tupper—Airworthiness Supervisor

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INTRODUCTION

Hello again! August is upon us, which means it is time for another newsletter. First, we wish to thank all of you who attended our IA renewal seminar last March. We hope you enjoyed it as much as we did. Plans are in the works for another seminar this coming March. We have reviewed your comments on the critique sheets and will attempt to cover some of the subjects you requested. By the way, Jim Tupper wanted you all to know that the spare bulb in the projector was not the problem. He managed to burn up the entire power supply board. We did not think that even he would go to such lengths to get out of a presentation!

Remember that this publication is for you, the maintenance professional, and your compliments, criticisms, and ideas are important in keeping this publication informative, interesting, and helpful as you go about your vital tasks. We appreciate the articles you have submitted and encourage your continued participation.

INSPECTORS

There have been changes to the inspector ranks since the February Newsletter. Caleb Glick went over to the avionics (arcs and sparks) side, and we have added several new faces. David Karalunas came to us from Quicksilver Air, where he served as Director of Maintenance. Mark Smith decided to give the FAA a try after running his own business in North Pole. He previously worked at Umiat Air and Markair. Jay Kitchens came to us from the Anchorage FSDO. Welcome aboard guys! Here is the latest lineup:

Fairbanks Airworthiness Inspectors:

James H. Tupper—Supervisor
George W. Earp—Avionics/SPM
John Q. Gamble
Caleb A. Glick—Avionics
Harley A. Holt
Eric L. Jones
David C. Karalunas

Hugh A. Keith
Steve Ketzer, Jr.
Robert “Jay” Kitchens
Cary J. Meier
Kenneth C. Thomas
John S. Sims
Hardey “Mark” Smith

You may contact them by telephone at (907) 474-0276, or by email using the following format: first name.middle initial.last name@faa.gov. No spaces, no caps. If you have questions or a problem, give them a call. They are here to help you!

SUBJECTS FOR UPCOMING A/W SAFETY MEETINGS

We are in the process of putting together our program of seminars for the coming year. We will announce the time, place, and subject of each seminar well in advance, so you can plan accordingly. If you would like to see a particular topic highlighted at a safety meeting, simply contact George Earp, A/W Safety Program Manager, and he will do his best to make it happen. Also, if you have any questions about the Safety Program, or have a burning desire to make a presentation on a subject of interest to you, George will be glad to hear from you.

Interesting and Important Maintenance Stuff

This Just In...

Special Airworthiness Information Bulletin (SAIB) No. NE-01-36, August 15, 2001. Applies to Lycoming-360 series engines that contain replacement crankshafts installed between May 1, 1997, and April 30, 2000. Some crankshafts had a heat-treat operation omitted. Highly recommend subject engines be inspected in accordance with Textron Lycoming SB 549, which can be accessed on the Internet at: www.lycoming.textro.com/main.html. You may also contact Lycoming by telephone at (570) 323-6181.

SAIB No. NE-01-37, applies to Lycoming IO-540 and TIO-540 engines with 300 hp or greater and addresses front main bearings P/N LW-1388T installed after August 24, 2000. Lycoming has reported six events of front main bearings delaminating and liberating metal particles into the oil system that accumulates in the oil filter. This could lead to an engine seizure and in-flight shutdown. Highly recommend performing oil filter inspections in accordance with Lycoming Mandatory SB 480D, which can be accessed on the Internet at: www.lycoming.textron.com/main.html. You may also contact Lycoming by telephone at (570) 323-6181.

Please check out SAIB No. CE-01-30, dated July 11, 2001. It applies to a number of the more popular Piper aircraft, including the PA-18-150, and addresses the inspection and possible replacement of stainless steel control cables as outlined in Piper Service Bulletin 1048. The FAA recommends that the cables be inspected during each 100-hour and/or annual inspection. You can contact The New Piper Aircraft, Inc., at 2926 Piper Drive, Vero Beach, FL 32960, for copies of the Bulletin. SAIBs are posted on the Internet at: av-info.faa.gov.

Articles

A Leaking Push Rod Shroud Seal—Minor Becomes Major

By Hugh A. Keith, Aviation Safety Inspector (A/W)

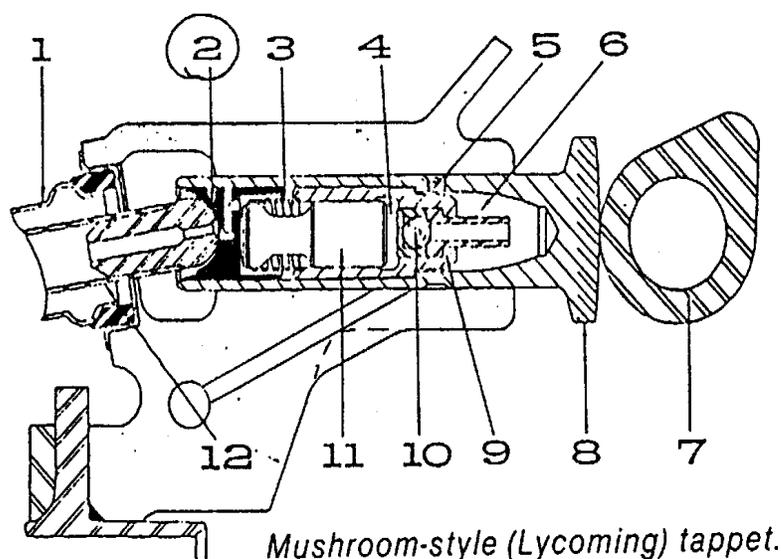
Would you believe you could leave out a push rod mechanism socket (inadvertently of course) and the engine would still run just fine? Believe it, two such incidents recently occurred in our district. This was much to the disbelief and embarrassment of the mechanics involved, and incurred major expense to the aircraft operators. Both engines in this case were Lycoming TIO-540 series engines.

The subsequent investigation into this matter found the engine tappet assembly has the capacity to not only pump itself up with oil to compensate for wear, as normal, but to also compensate for the missing socket. Now this is quite an accomplishment considering the socket takes up approximately ¼ inch of the mechanism travel.

Although the engines initially ran fine, in a matter of just a few hours both valve push rod mechanisms self-destructed. Without the socket in place the push rod is not secured at the socket end and lubricating oil is not properly routed. The push rod, not being contained,

bounces around causing damage to the tappet body, the shroud tube/seal, the push rod itself, and can even damage the crankcase. Also of interest, the Lycoming tappets are the mushroom-style, and to replace them you have to split the crankcase—one engine had to be replaced because it was at a remote site.

So, let's review what we have learned from this experience so we may prevent another such occurrence. Both incidents occurred during an aircraft inspection when discrepancies were written to repair leaking push rod shroud seals. To change the seals, a disassembly of the push rod mechanism is required. On the reassemble procedure, let's review the Lycoming Operator's Manual. Under *Cylinders* it states, "the hydraulic tappets, push rods, rocker arms, and valves must be assembled in the same location from which they were removed." The sockets (part of the tappet) were inadvertently left out. How do you assure yourself that you have installed all the parts? Again, let's go to the Manual, it states, "on re-assembly it will be necessary to remove and bleed the hydraulic tappet plunger assembly so that dry tappet clearance can be checked." There you have it, following re-assembly, the dry tappet clearance must be checked and the plunger assembly must have been bled of oil, so it is flat, to get the proper dry clearance check. Remember, the engine run-up will not show the missing part.



1. Shroud Tube
2. Push Rod Socket
3. Plunger Spring
4. Oil Pressure Chamber
5. Oil Hole
6. Oil Supply Chamber
7. Camshaft
8. Tappet Body
9. Cylinder
10. Ball Check Valve
11. Plunger
12. Push Rod

Nicopress Sleeves

Recently, a question came up about plated and plain sleeves, and their intended use. John Gamble pointed out the reference in AC 43.13-1B, page 7-34, Table 7-6. The note at the bottom of the table tells us that the plated sleeves are required on stainless steel cables due to electrolysis caused by different types of metals. Thanks John!

Reference Materials

The July/August issue of *FAA Aviation News* contains two articles on Suspected Unapproved Parts and one on Owner Produced Parts—the latter, written by none other than Bill O'Brien. We have a few copies here at the FSDO and will be glad to send you one while supplies last. Or, you can subscribe to the publication by contacting the Government Printing Office Customer Service at (202) 512-1800. You can view the articles on the Internet at: www.faa.gov/avr/news/newshome.htm.

Airworthiness Directives (AD), Advisory Circulars (AC), and More on the Web

AD's, AC's, FAR, and TC Data Sheets are available on the Internet at: www.airweb.faa.gov.
Check it out!

Other Interesting Web Sites

Check out Aerolearn at: www.aerolearn.com and *AMT* magazine at: www.AMTonline.com.
Both sites have on-line training programs available—most are free!

In Closing

Be sure to mark your calendar for October 6 and 7, 2001. The Aviation North Expo will be held at the Last Frontier Club at Ft. Wainwright on those dates. Check out the web page at: www.aviationnorth.org for registration information and details on the event. At least one Charles Taylor Award will be presented at the banquet on the evening of October 6.

Since it is impossible for us to mail to all of the A&Ps in our district, when you have finished reading this Newsletter, please pass it on to one of your A&P buddies.

***'Till Next Time...
Keep 'em Flying!***

