

# An A.D. issued by Mosler Motors

Tim Kerns, the C.E.O. of Mosler sent me this Homebuilders Airworthiness Directive. I'm placing the entire AD for your review.

## Homebuilders' Airworthiness Directive

Concerning HAPI "MAGNUM" and "MAGNUM PLUS" engines and certain Mosler separate-head four-cylinder engines (NOT conventional-head engines using modified Volkswagen heads):

At the time when Rex and Patrick Taylor left Mosler Motors, Inc., a thorough review of the HAPI design and production procedures was made by Mosler Motors, Inc. Mosler experts determined, through an analysis of old HAPI correspondence and actual examination of several heads, that a particular and specific problem may exist in a small percentage of the separate-head engines (known variously as HAPI and Mosler 75 hp and 82 hp, MAGNUM and MAGNUM PLUS), traced to worn-out tooling used by HAPI and brought to Mosler by HAPI.

Symptoms include: hard cranking of the engine (especially when hot); rough idle when hot; high EGT; poor fuel economy. These symptoms may exist singly or in combination. The cause of these symptoms is one or more stuck valves, due to use of an old undersize valve guide reamer.

Engines made (and warranted by) HAPI, as well as Mosler engines signed off prior to November 21, 1990 are susceptible. Mosler engines signed off after November 20, 1990, are NOT affected.

All HAPI and Mosler four-cylinder engines may also have a valve spring which is too strong. This is evidenced by an orange color code, and a seat pressure of 180-200 lbs. These heavy springs should be replaced by either a 150 lb spring (coral or lavender color code) or even the stock VW valve spring, provided seat pressure is at least 90 lbs, and that the valve guide clearances are correct.

Mosler Motors, Inc., is offering, on any HAPI or out-of-warranty Mosler engine to receive heads and perform the following:

- 1) Clean and disassemble heads
- 2) Inspect valves, guides, and seats
- 3) Knurl and ream guides to proper size; replace if necessary
- 4) Reseat valves; replace seats and / or valves if necessary
- 5) Measure and cc heads to produce proper compression ratio (usually necessary on HAPI engines), and list proper deck height for reassembly
- 6) Reassemble heads, using the proper valve springs.

This service is available for \$265.00 if assembled heads (heads only - no rocker boxes, etc.) are shipped prepaid to Mosler Motors, Inc. The completed, reworked heads will be returned COD, freight collect within three weeks.

This offer extends until July 4, 1991, and extends only to HAPI and Mosler four-head engines of any vintage. The work carries Mosler's one-year, 100-hour warranty. Owners of in-warranty Mosler engines may have the work performed at no charge, subject to the terms of the warranty.

For further information and return authorization, contact:  
**Mosler Motors, Inc.**

140 Ashwood Road  
Hendersonville, North Carolina 28739 USA  
(704) 692 - 7713  
(704) 692 - 2008 FAX

required information: Engine size (or stroke) and serial number Date of purchase Airplane type or use (if not aircraft) Return address for shipment
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Also in his letter, he did answer a question that all of us have been wondering about. He states in his letter.

**"Of course, Mosler is honoring any warranty on any Mosler or Mosler/H.A.P.I. engine still under warranty, shipped new from North Carolina."**

An area that I'm concerned with is the recommended 150 lb spring pressures. It's way to high and over kill. I have been selling TRW, Speed Pro, Crane Cams, Competition Cams, Cam Dynamics camshafts and related valve train items for 20 years. We have been running consistently in small block Chevrolet hydraulic and mechanical (solid lifter) to 7000 + RPMs with a 100 to 110 seat pressure and Roller camshafts combinations to 9000++ starting at 140 lbs seat pressure. Now these camshaft profile of

these VW engines are not very aggressive nor do they turn anywhere over 4000 RPM.

A figure of 80 - 90 lbs will work just fine. Depending on where your springs installed heights are, you can use a stock small block chevy valve spring; remove the inner dampener and it will land right in this range. This spring combination is a natural since they use a small block Chevrolet lifter in the hydraulic conversion in these VW motors. - Spud

## MAGNUM HEAD VALVE CLEARANCE PROBLEM MOSLER "HOMEBUILDERS' AIRWORTHINESS DIRECTIVE"

The recently issued Mosler " Homebuilders' Airworthiness Directive" documents a legitimate problem with some Magnum Heads. Last summer I purchased and installed the Magnum Heads on C-GGEM. Since installation I have had recurring valve problems always indicated by loss of compression in one or more cylinders. After a detailed investigation of the engine, I found that the exhaust valves had less than 0.002" clearance in the valve guides. To correct the problem I had a Automotive machine shop clean the heads, regrind the valves and seats, and ream the valve guides to give 0.004 - 0.005" clearance. The total cost was \$125.00 (US). I am now reassembling the engine and hope to be flying in the near future.

Regarding the Mosler " Homebuilders' Airworthiness Directive" there are a few comments required:

1. Only the airworthiness authority of a country, ie. FAA or Transport Canada, have the authority to issue Airworthiness Directives. Once issued they become part of the Airworthiness regulations and must be complied with in order to maintain the airworthiness of your aircraft. A manufacturer may issue Service Bulletins regarding their equipment.

2. Not all engines are affected and if your engine has more than 50 hours with no loss of compression it is very unlikely that you have a valve problem.

3. There is no requirement to return your engine to Mosler if you do have a problem unless you are attempting to get the repair done under a current warranty. The repairs required can easily be done by any competent automotive machine shop ( and will cost less than \$265.00).

THE BOTTOM LINE IS TO BE AWARE OF THE POTENTIAL PROBLEM AND IF NECESSARY REPAIR YOUR ENGINE.

## MAGNUM ENGINE PUSHROD TUBE INTERFERENCE

While disassembling my engine ( HAPI) to resolve sticking valves I found a small amount of fine metal particles in the oil. After a detailed inspection the source was found to be the No 4 cylinder exhaust valve pushrod. The engine had the two piece pushrod tubes and the tube springs was rubbing against the pushrod. The pushrod had a groove approximately 1/16" worn half way around the circum-

ference.

Recommendation: If your engine has Magnum heads and two piece pushrod tubes, carefully inspect oil for metal particles on each oil change. If any metal is found inspect the pushrods for damage. If there is any damage replace the pushrods and consider replacing the pushrod tubes with the one piece tubes. ( One pieces, cad plated, are available from Great plains for \$12.95/set).

#### MOSLER SERVICES

During the past year I have dealt with Mosler on at least three occasions and in each instance my orders have been "screwed up". Some of the problems have been:

-incomplete orders, parts missing; -wrong parts shipped; -orders not shipped as requested; -no responses to correspondence; and -wrong prices charged to Visa.

It would be interesting to know if others are having similar problems. The obvious solution is to buy elsewhere. Great Plains have most of the required engine parts and I have had good service from Steve Bennett. My personal recommendation is don't use Mosler unless absolutely necessary and if you must expect your order to be "screwed up".

Major Ted Givins

6318 Fortune Drive

Orleans, Ontario

Canada K1C 1Z1

#### Dear Fellow Dragonflyers

I am having a problem with Mosler Motors. The new owners of H.A.P.I., are not honoring their responsibility to me on a H.A.P.I. product.

I purchased a H.A.P.I. Magnum plus engine from H.A.P.I. while they were in Eloy, Az. and had it at home on my airplane when the crankshaft problem was discovered. I returned the engine for the crank fix as per H.A.P.I.'s instructions. When Mosler purchased H.A.P.I., my engine was taken to Mosler's shop, along with everything else of H.A.P.I.s from Eloy.

On approximately 11-15-90 I was told ( by Pat Taylor at Mosler) that my engine was finally ready. After another three weeks or so without my engine, I contacted Mr. Tim Kern at Mosler about this. After numerous phone calls, during which Mr. Kern changed his story from "I can't find your engine" to "I found your cases only" to "It's an almost complete engine, using Mosler's parts on your case", Mr Kern finally got to the bottom line... he wants me to pay for the repair work.

The repairs were mandated by a design flaw and were to be done as no cost warranty work, according to H.A.P.I. this was made very clear at the time the recall was sent out.

I understand that this is not the first time that Mosler has pulled something like this on a H.A.P.I. customer. I am interested in talking with anyone else who is in this situation, or who was in the same situation and resolved it. Perhaps we can help each other to get what is owed to us.

Please call or write about your experiences with Mosler's actions about H.A.P.I. products.

Thanks,

Mike Starkey

2910 Roc Rd

Placerville, Ca 95667

(916)621 0069

### *A letter from Viking Aircraft*

Hey Spudley !

We have been super busy with the COYOTE flight test program. Anyhow here's some input for the newsletter.

VIKING AIRCRAFT IS SOLIDLY BACK IN BUSINESS !

ALL OF THE PREFABRICATED PARTS ARE NOW BEING OFFERED AND SOME OF THE MORE CRITICAL PARTS ARE " IN STOCK ".

WE HAVE ---

LANDING GEAR LEGS, TAIL WHEEL SPRINGS, COWLINGS, CANOPIYS, CONTROL SYSTEM PARTS

WE ALSO HAVE A GENEROUS SUPPLY OF NEW PLANS IN STOCK.

WE HAVE PLENTY OF MOST ISSUES OF THE ORIGINAL DRAGONFLY NEWSLETTERS. FOR THOSE WHO DON'T HAVE THEM, A PACK OF OLD NEWSLETTERS, LACKING A COUPLE OF ISSUES ARE " SPECIAL PRICED" AT \$35.00 PER SET. THIS SHOULD BRING A NEW BUILDER " UP TO DATE ".

GENERAL NEWS UPDATE

The prototype is undergoing some modifications which I believe will make it an even better aircraft. All of those mods will be retrofittable to presently flying DRAGONFLYs, or DRAGONFLYs being built.

Viking will be working closely with our approved vendors to assist them in their stocking of exact plans specified materials for DRAGONFLYs.

OUR APPROVED VENDORS ARE:

WICKS AIRCRAFT SUPPLY - HIGHLAND, ILL

ALEXANDER AEROPLANE CO - GRIFFIN, GA

AIRCRAFT SPRUCE & SPEC. - FULLERTON, CA