

----- Original Message -----

**From:** [Larry & Cathy Vetterman](#)

**To:**

**Sent:** Friday, May 22, 2009 1:21 PM

**Subject:** Fw: pics of new sub cowl

Doug, here is the latest mod and pictures of same.

As promised I fabricated a new sub cowl so the original crossover style exhaust could be installed and tested. This combination would allow any builder to do the same using the current exhaust system and feel assured that the unit works well and cylinder temps can be controlled. Notice on this unit the rear louver was removed as the exhaust outlets along with the louvers in the cowl appear to allow enough airflow for cooling. If during hot summer weather the rear louver can be added if necessary. It is my goal to get the cylinder temps between 350 and 375 degrees F and the oil temp between 185 and 200 degrees F. At these temps the cylinder choke and rings allow the engine to be at peak tightness, thus giving the best compression and less blowby. In other words, the engine is developing the most HP possible. I can control the oil temps. from the cockpit by the use of a manual valve and not depend on a vernatherm which is only 75% efficient. There have been many posts concerning hot oil temps. and this subject regarding vernathems and how they work or don't work will be addressed at a later date.

The flight data with this new sub cowl is essential the same as the original data. The engine is the stock M1B with the G3 ignition. One thing that I have noticed is the actual altitude varies alot depending on OAT and barometric pressure. I always do the tests where the flight data system computer says the density altitude reads 8500 ft. regardless of actual altitude.

Density altitude 8500 ft, OAT 44.3 F., MP 22.7 RPM 2450, IAS 171, TAS 195.5, Cyl. temp #1=366 F. #2=363 F. #3=369 F. #4=359 F.

I am quite satisfied with the results of these tests and the 7A will probably fly all summer in this configuration. Did I mention that there is not floor vibration? This sub cowl mod is very easy to do but the louvers in the bottom of the cowl must be installed for enough cooling airflow. I will probably install the rear louver and close off a portion of the front louvers to see if there is any speed changes. The hardest part of this project was sanding, filling pin holes. and painting to match. Most of you know the drill there. As stated above the next project will be to address hot oil temps. so stay tuned.

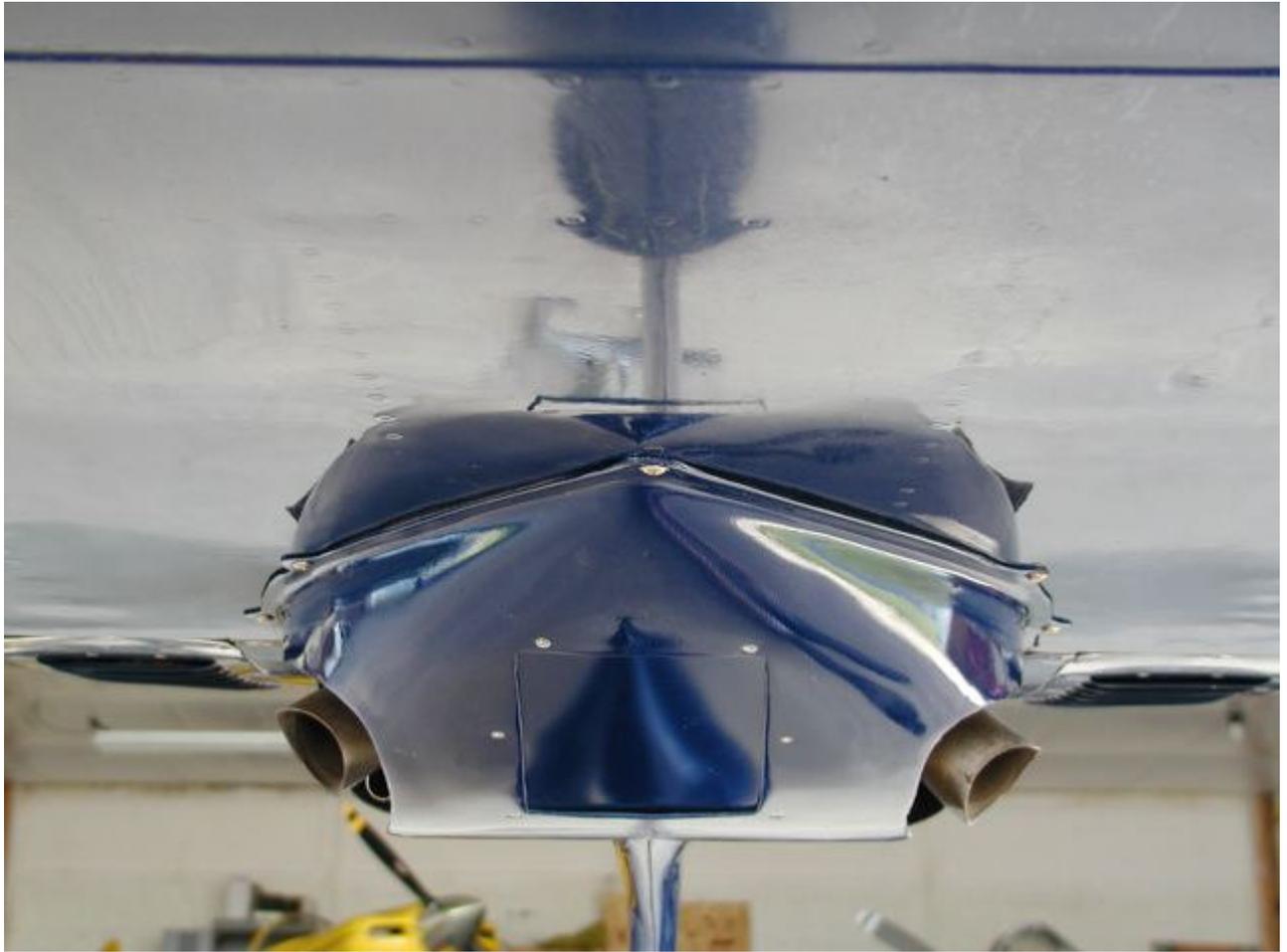
Larry D. Vetterman



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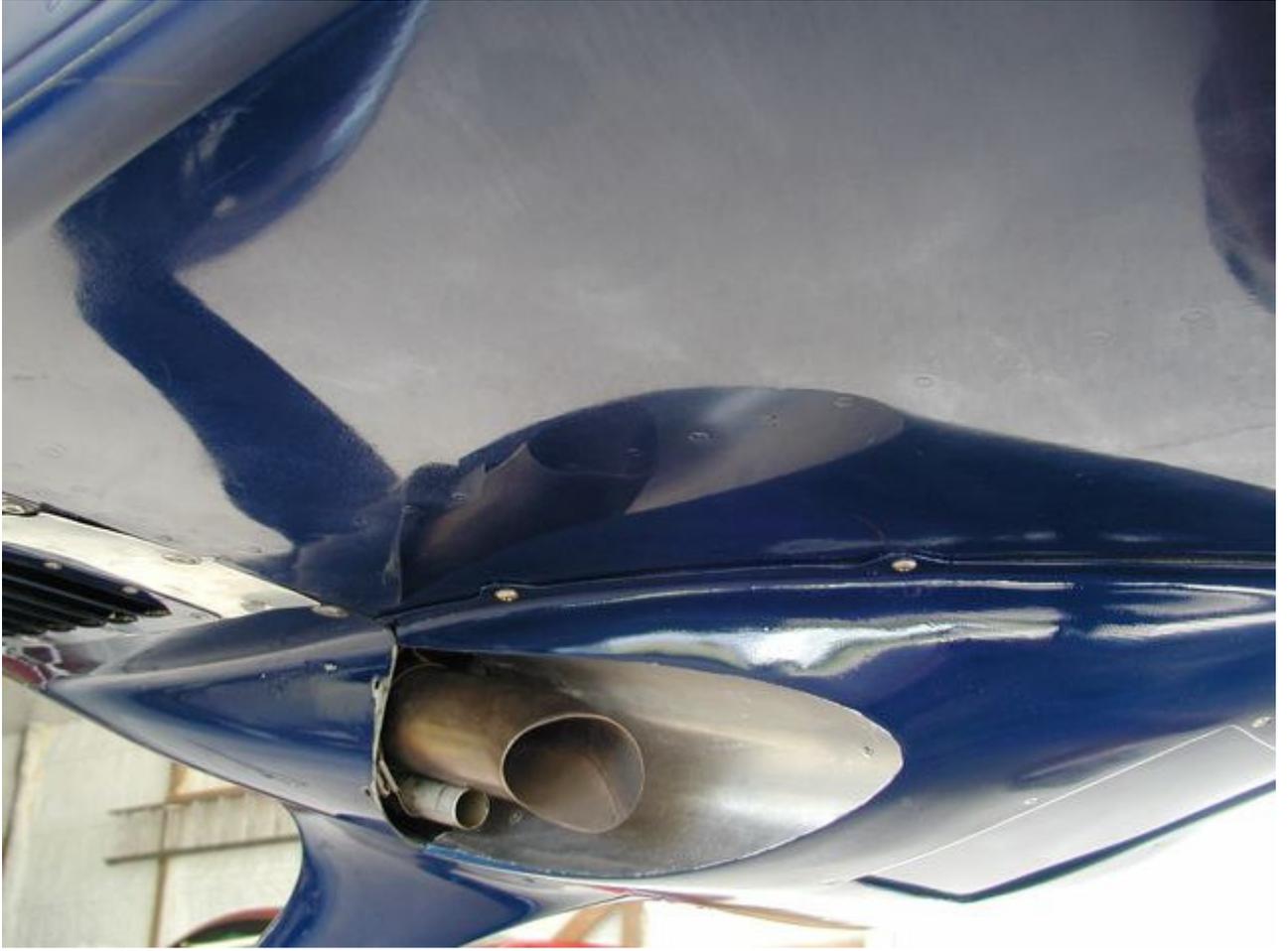
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