

Bob Davenport's Long-EZ

Bob Davenport (FL) - The photos show oil flow on my new boat tail cowl and modified Sport Flight wheel pants. Flow lines are light as I was unable to get to the drain oil. I used engine oil with light grease mixed in.

It appears the gear leg intersection creates a large turbulent area, "A". Areas "B" & "C" are believed to be caused by the reverse curve in the rear cowl sides with probably some influence from the bubble over the alternator at "D". The bubble is minimal in size and I doubt there is much else I can do with it.

The flow separation on the cowl sides proves Klaus was correct when he told me the cowl length was too short to use a reverse curve without causing drag. The sides should continuously curve from firewall to tail post.

The tire extending below the wheel pant seems to cause a lot of turbulence on the underside of the pant.

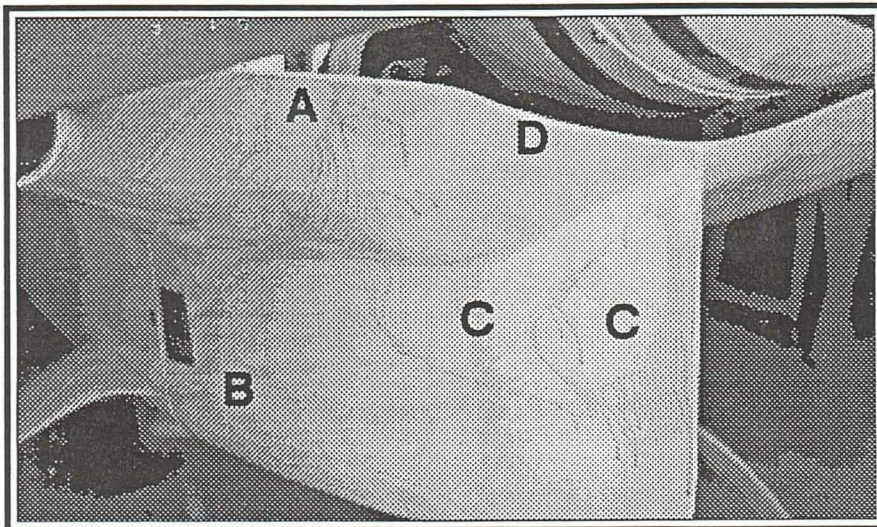
Editor: At Wendover 95 Rob Martinson addressed this with a small fairing aft of the tire under the pant.

The following are dynamic test results of the "lamp shade" and "engine to starter ring gear fairing". These cooling drag reducing devices were shown in CSA Jan 95, page 10. Care was taken to insure aircraft weight and weather conditions were as similar as possible.

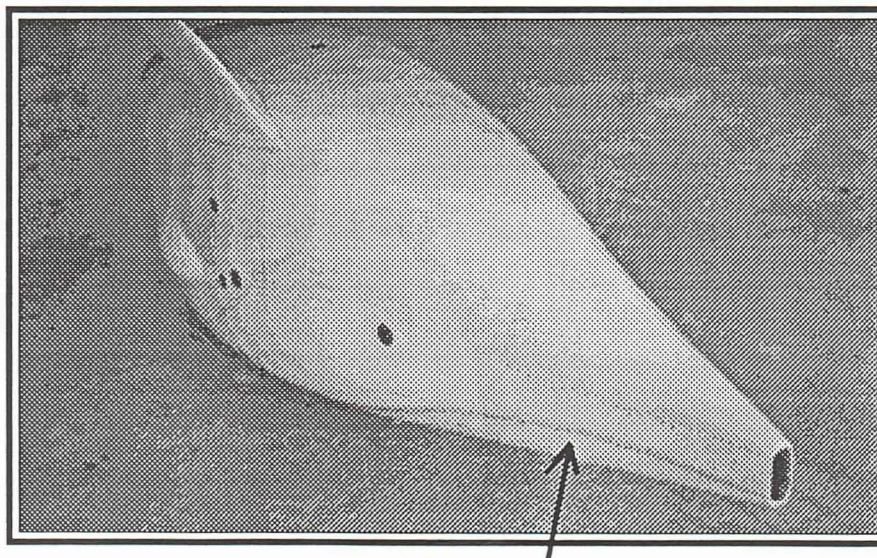
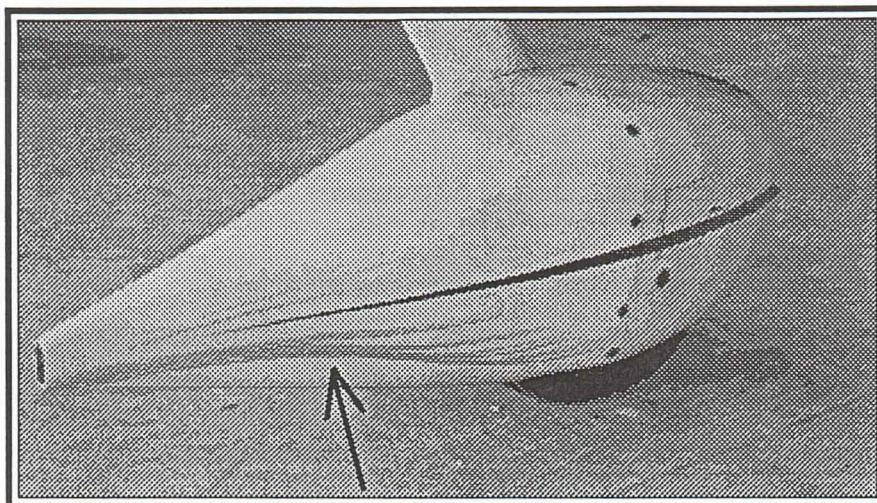
Performance with fairings at 8750' MSL and 2850 RPM = 221 mph TAS.

Performance without fairings at 8800' MSL and 2850 RPM = 217 mph TAS.

Cooling drag decreased, allowing a 4 mph speed increase. The one piece "lamp shade" requires prop removal and fastening the front end of it with RTV. I was hoping there would be no great difference between the "before and after" tests as I think installation is a pain in the neck. With a 4 mph increase I am going to reinstall the fairings anyway.



Unattached flow caused by alternator dome



It would be interesting to see how Rob Martinson's fairing aft of the tire would affect the curved air flow

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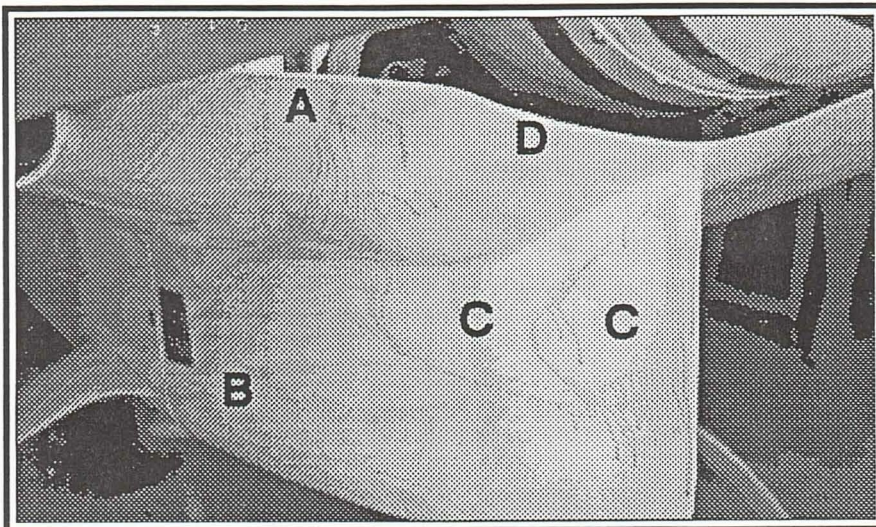
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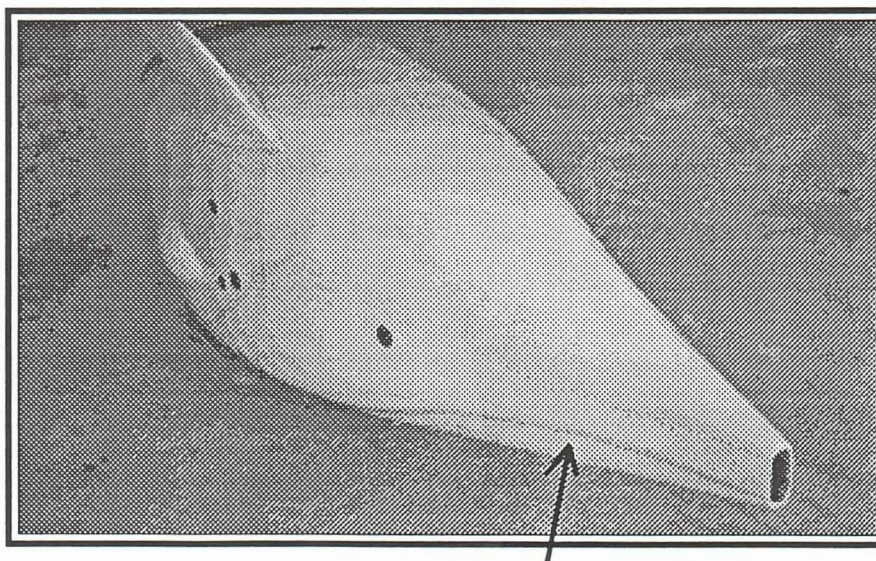
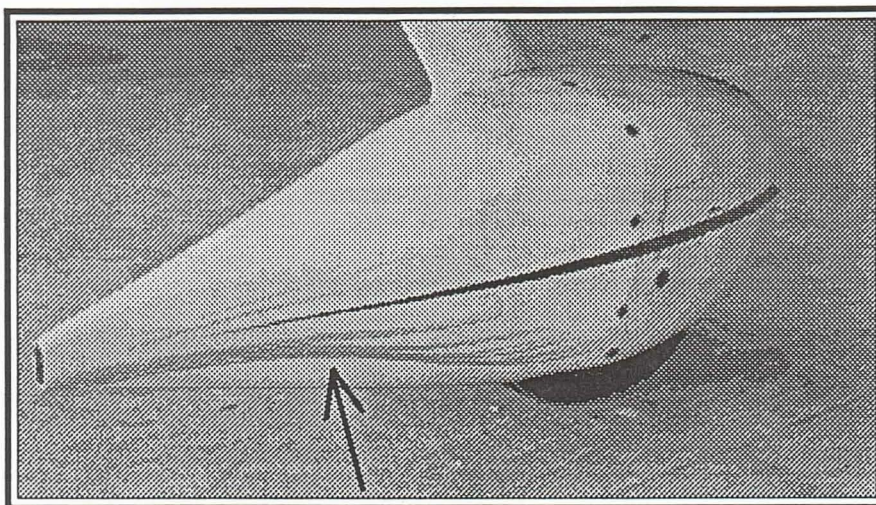
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