



Memorandum for Record

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Subject: CEN19LA317, Merlyn Products, INC Examination Follow-up

Staff at Merlyn Products were contacted to provide clarification to examination findings on a Merlyn wastegate controller that was installed on a Piper PA28, N2890T. The airplane was involved in an accident following a total loss of engine power. The following are select findings from the examination report and clarifications of those findings.

- A. *Exhaust bypass elbow: Serious heat creep and deformation of the elbow at the cuff end and tube bend.* Heat creep in the elbow normally happens over time and does not affect operation of the controller.
- B. *The orientation of the heat shield to the AN822-4 fittings on the cap and housing was incorrect. The AN822-4 fittings were not oriented correctly with respect to each other (the upper deck pressure side fitting misaligned).* The “incorrect orientation” of the heat shield would not affect the function of the controller, but may have impacted the routing of the hoses to the fittings. The misaligned upper deck fitting would not affect operation of the controller.
- C. *Receiving function test indicated it did not hold vacuum. The diaphragm fabric has a small hole in the viton fabric at the bottom of the diaphragm.* The controller would not hold vacuum due to the hole in the diaphragm. The leak would cause the wastegate to the closed position. The closed wastegate would result in an increase in manifold pressure. Manifold pressure is monitored and controlled by the pilot regardless of the functionality of the wastegate.