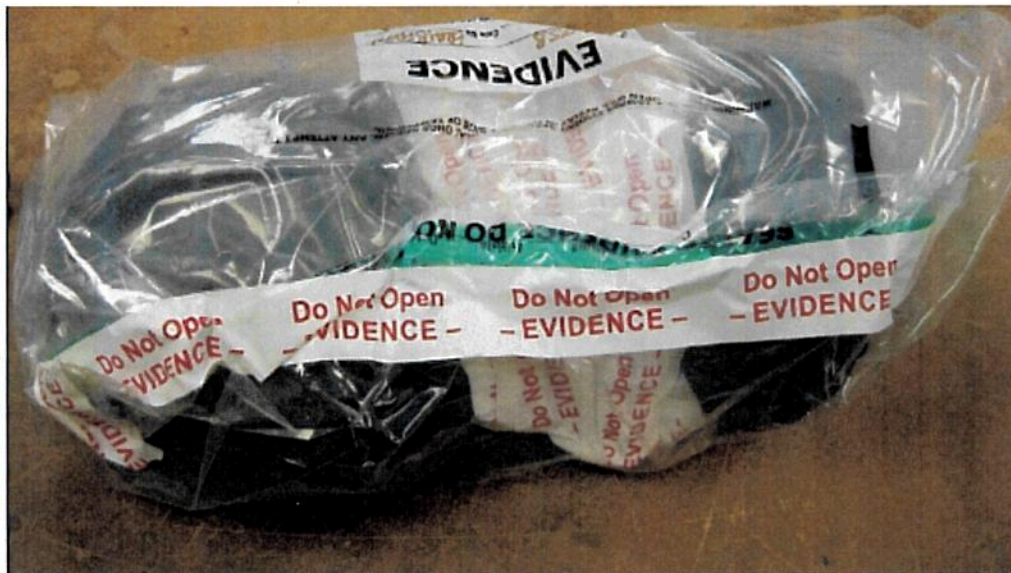
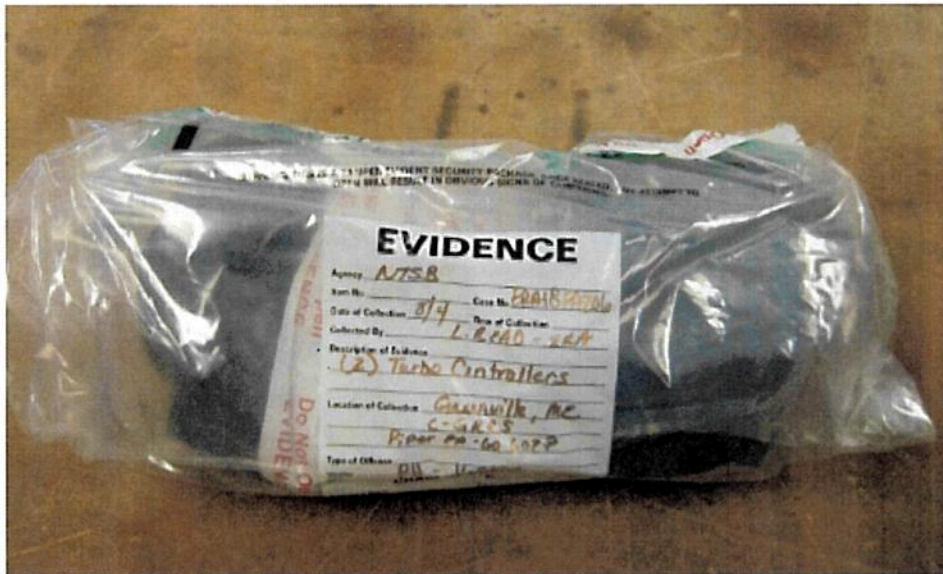
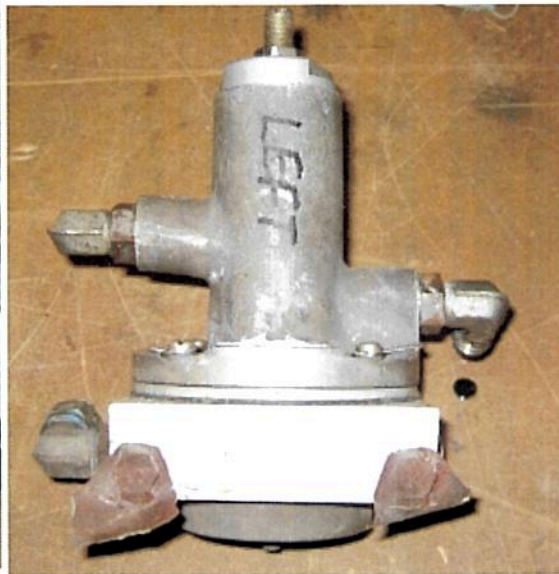


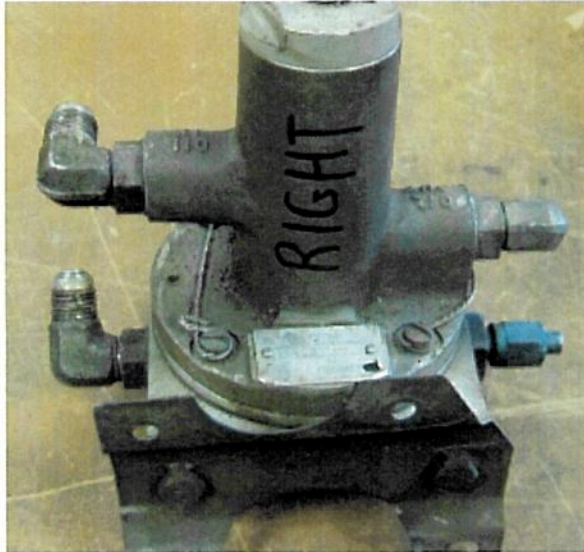
On August 16, 2018 an examination was performed on two Turbo Controller units that were installed on an twin engine aircraft involved in an accident. The Turbo Controllers were inspected for external damage and function. Case Number ERA18FA206.



Left Hand Turbo Controller



Right Hand Turbo Controller



A test for function was performed on two Turbo Controllers and both operated correctly. The Left Hand Turbo Controller was slightly out of adjustment. The adjustment setting was set to a higher setting, meaning that it would've caused the engine to produce more power and not less.

The Valves were tested in accordance with Acceptance and/or Function Test Procedure [FTP1-2](#) and Turbo Controller functional Test Check list (See attached reference). No oil or air leaks were noted during test.

In attendance during inspection at Aerostar Aircraft Corporation, [REDACTED] Hayden, ID 83835.

Mr. Mark Roads: Aerostar Aircraft Corp.

Philip W. Griffis: FAA NM-13

Philip W. Griffis

Aviation Safety Inspector, Spokane FSDO



Prepared By: _____

Checked By: _____

Section: _____

MACHEN, INC.Document No.: FTP-1-2Page Rev.: HPage No.: A.9

Appendix A - Figures

MACHEN, INC.
TURBO CONTROLLER FUNCTIONAL TEST CHECKLIST
 P/N 65-10006-501 Drawing Revisions S and up

 SERIAL NUMBER 1315
 P.W.O. NUMBER _____

 DATE OF TEST 08/16/2018
 INSPECTOR NO. _____
TEST PROCEDURE

1. SAE 10 Weight Oil
2. 70 PSI oil inlet pressure (P4)
3. .049" (90-10002-Z) restrictor in the actuator inlet & .040" in the controller MAP inlet
4. Controller leakage rate (Set MAP(R) to 38" and UDP(L) to Ambient) with oil inlet pressure (P4) at 70 psi.
 Oil outlet pressure (P3) 54 (41 psi min.)
 Oil temp 89 (80-110 °F)
5. Upper deck pressure (L) 37"
6. Increase MA (R) from 30"
 Actuator starts to extend at $33 \pm 1/2$ " 33 MAP(R) 36 PSI (P3) (18)
 Actuator is fully extended at $35-1/2 \pm 1/2$ " _____ (38)
7. Decrease MAP(R) from 43"
 Actuator starts to retract at 34 ± 1 " 33 _____ (34)
 Actuator is fully retracted at 31 ± 1 " 31 _____ (13)
8. Increase both MAP(R) and UDP(L) together
 Actuator starts to retract at $43 \pm 1/2$ " 42.5 _____ (34)
 Actuator is fully retracted at $47-1/2 \pm 1$ " 46 _____ (13)
9. Set MAP(R) at 34" then set UDP(L) as required to achieve 30 psi oil pressure (P3) (approximately 37" UDP(L) required). Increase MAP(R) from 34" to 35" and record oil pressure change (P3) 6 PSI (3 psi min.)
 Reduce MAP (R) to 33" then increase to 34" and record oil pressure change between 33" and 34"(P3) 3 PSI (3 psi min.)
 Set UDP(L) at 37", MAP(R) at ambient, increase MAP(R) slowly to 36", check to make sure there is smooth movement from start to finish. Good. check
10. Number of washers under diaphragm No Thr Down. thick _____ thin _____
11. Number of full (360 deg.) turns on the adjustment screw Ops Check only turns _____
12. Remarks _____

Form M-93-01 (Revised 7/31/00)

FIGURE A5 - Form M-93-01

Prepared By: _____

MACHEN, INC.

Document No.: FTP-1-2

Checked By: _____

Page Rev.: H

Section: Appendix A - Figures

Page No.: A.9

MACHEN, INC.
TURBO CONTROLLER FUNCTIONAL TEST CHECKLIST
P/N 65-10006-501 Drawing Revisions S and up

RH

SERIAL NUMBER 1691
P.W.O. NUMBER _____DATE OF TEST 08/14/2018
INSPECTOR NO. _____**TEST PROCEDURE**

1. SAE 10 Weight Oil
2. 70 PSI oil inlet pressure (P4)
3. .049" (90-10002-Z) restrictor in the actuator inlet & .040" in the controller MAP inlet
4. Controller leakage rate (Set MAP(R) to 38" and UDP(L) to Ambient) with
oil inlet pressure (P4) at 70 psi.
Oil outlet pressure (P3) 63 (41 psi min.)
Oil temp 81 (80-110 °F)
5. Upper deck pressure (L) 37"
6. Increase MA (R) from 30"
Actuator starts to extend at $33 \pm 1/2$ " MAP(R) 37 PSI (P3) _____ (18)
Actuator is fully extended at $35-1/2 \pm 1/2$ " 36 _____ (38)
7. Decrease MAP(R) from 43"
Actuator starts to retract at 34 ± 1 " 36 _____ (34)
Actuator is fully retracted at 31 ± 1 " 34 _____ (13)
8. Increase both MAP(R) and UDP(L) together
Actuator starts to retract at $43 \pm 1/2$ " 39 _____ (34)
Actuator is fully retracted at $47-1/2 \pm 1$ " 43 _____ (13)
9. Set MAP(R) at 34" then set UDP(L) as required to
achieve 30 psi oil pressure (P3) (approximately
37" UDP(L) required). Increase MAP(R) from
34" to 35" and record oil pressure change (P3) 6 PSI (3 psi min.)
Reduce MAP (R) to 33" then increase to 34" and
record oil pressure change between 33" and 34"(P3) 8 PSI (3 psi min.)
Set UDP(L) at 37", MAP(R) at ambient, increase MAP(R) slowly to
36", check to make sure there is smooth movement from start to finish. good check
10. Number of washers under diaphragm NA No Tear Down thick _____ thin _____
11. Number of full (360 deg.) turns on the adjustment screw ops check only
from full out to achieve adjustment (4 to 7) _____ turns
12. Remarks _____

Form M-93-01 (Revised 7/31/00)

FIGURE A5 - Form M-93-01