

**WPR17LA064 Examination Notes (NTSB)
Stevensville Airport (32S) March 27-28, 2017**

Participants

Michael Huhn - NTSB WPR

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General

- AC in third party hangar, on jacks & tailstand, with engine hoist supporting engine
- A36TC N3803J, sn EA-171
- LMLG fracture-separated
- RMLG extended
- NLG fracture-separated
- Fuselage buckled (LH side near wing join)
- Wings & tail surfaces equipped w deice boots, but airplane not approved for FIKI
- 6 seats, club style
 - o 2 front seats
 - o 4 aft seats, 2 aft facing & 2 fwd facing
 - o Cockpit door RH side
 - o Dual aft cabin doors, RH side
- Cabin interior intact
- O2 system plumbing (not determined if tank onboard)
- Significant unusual heavy objects, which were onboard for the accident flight
 - o Extension cord (~10 lbs)
 - o Wheel chocks (~15 lbs, suitable for large corporate aircraft)
 - o Approx Qts bottles of oil

Wings

- Both tip tanks fractured & partially separated
- Both wings significant impact damage (outboard, primarily LEs)
- VGs installed on LEs upper surfaces
- Stall vane impact damaged & mud caked
- Air data probe impact damaged
- Flaps retracted
- Flaps & ailerons all remained attached
- Fuel caps remained installed
- Precise Flight brand speed brakes

Flight Controls

- All primary surface remained attached
- Airplane equipped with dual yoke
- No continuity to ailerons, elevator, or pitch trim tabs
 - o Reason(s) not determined
 - o Yokes moved freely, but control surfaces did not respond
- Elevators bussed & free to move manually

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- o No twist or deformation visually apparent
- Dual pitch trim tabs (1/elevator)
 - o Tabs not in agreement w one another
 - o RH approx. faired
 - o LH displaced slightly further (approx. 1-2°) TED than RH
 - o Cockpit trim position indicated ~"8.2 UP" when first observed
 - o Activation of cockpit pitch trim wheel did not result in tab motion

Instrument Panel

- Intact
- Mix of Beech instruments & numerous post-delivery instruments
 - o EI Engine monitor: UBG-16 sn 123538
 - o EI fuel flow: FP-5L sn 102126
 - o Digital tach
 - o WX-11 Stormscope
 - o Autopilot
 - o King flight director
 - o "Huntington Air Data" switch
 - o Multiple data ports
 - o Garmin NavCom
 - o IVSI
 - o Radar Altimeter
 - o Beech MP & Fuel flow (analog)
 - o Dual altimeters & A/Hs
- Neither EI unit had NVM for flight data
 - o Port wiring traced to EI MUX-8A
 - o MUX-8A unit, sn 123539, to be sent to NTSB HQ recorders lab for download

Engine & Prop

- Engine and mount partially separated from firewall
- Prop still attached to engine
 - o All three blades free to rotate in hub
 - o All 3 bent aft
 - o All 3 significant LE damage (gouges, abrasion, missing material) especially towards tips
- No indications of any pre-impact damage, fire, or oil leaks
- Turbo System
 - o No indications of any pre impact damage or thermal distress
 - o Intercooler partially dislodged – no PN or mfg ID, no data plate
 - o Compressor section housing free to rotate (V band insufficient security)

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- Preformed silicon inlet tube (pn 98-1001-2) from intercooler to fuel servo separated at servo, but observed to be connected in post accident, pre-recovery photos
- Per pilot: Intercooler tube 98-1001-2 reportedly was replaced ~ Oct 24 2016 due to pilot's report of lack of boost (he stated that 24" MP was maximum achievable). Landed at Coeur D'Alene (ID) and had repaired there. Mechanic was possibly not an FAA A&P. No entries in airframe or engine log. Estimated date & time: TT 2297.4, 68.4 hrs since last Annual. NTSB-visual exam determined component was punctured on inner radius
- On a subsequent flight from Bellingham WA to 32S, the pilot experienced low/no boost. He continued that flight successfully to 32S. A mechanic (Jason Tucker) from 'Choice Aviation' (in MT) came to examine. According to the pilot, the mechanic reportedly found "a failed clamp on one of the turbocharger ducts," but no corresponding logbook entries were able to be located. New part on AC observed to be pn 96 (or 36) -1001-002D.
- Most other engine components essentially intact
- LH mag equipped with 'Shower of sparks'
- No shower of sparks or impulse coupling on RH mag
- Mags turned with engine manual rotation
- Both mags sparked by hand at 3 top towers each. Bottom towers not tested
 - All 6 cylinders had at least one spark available
- All 6 top plugs fine wire, essentially normal
- Thumb compressions all 6 cylinders
- Mechanical fuel pump (EDP) contained and pumped fuel on manual rotation
 - Coupler intact
- Manifold distribution valve intact, contained clean fuel, no leaks or signs of leaks
- All 6 injector nozzles had clear passages
 - Significant fuel staining at Nos. 4 & 6, some at No. 3 and minor at No. 1. Nos. 2 & 5 clean
 - Orifice sizes not noted by NTSB, but each injector was stamped with its cylinder number
- 24 VDC battery mounted on forward RH upper firewall
 - Box & battery punctured by impact; significant corrosion (battery electrolyte-induced) around puncture
 - Appeared to be result of accident
- Attempts to power airplane by connecting battery cable(s) and actuating master switches were unsuccessful - attributed to electrolyte loss
 - Therefore unable to obtain reading from digital tachometer/hour meter

Maintenance Records & Documentation

- Numerous records & documents- consistent with age of airplane
- Separate Airframe, Engine & Prop logs, but multiple recent (2010 & subsequent) engine entries observed in A/F log

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- No entry observed for 98-1001-002 changeout or subsequent securing action by 'Choice Aviation'
- Engine:TSIO-50-UB 248908-R
 - o Installed 9/19/10, at Tach 2287.2
- Most recent Annual: 9/24/16 Tach 2859.0
- Turbo to intercooler duct replaced 2/18/14, Tach 2565.8
- 11/22/10 Tach 2297.8, 10.6 SMOH
 - o Wastegate "calibrated" & reinstalled
 - o Turbo controller "repaired" & reinstalled
 - o Duct 98-1001-002 D replaced with new
- Most current W&B
 - o Dated 6/14 2008
 - o Calculated based on 5/18 2007 version (also calculated)
 - o EW: 2724.38 EWCG: 81.44 EW Mmt: 221865.15
 - o Two copies of this W&B located in maintenance records documentation, but none in POH or other cockpit docs.