

Turn Coordinator Examination Notes from July 29, 2013

N5714W

NTSB Case # ERA13FA088

Parkton, North Carolina

1) ACCIDENT:

Location: Parkton, North Carolina
Date: December 16, 2012
Time: About 1532 EST / 2032 UTC
Aircraft: Piper PA-28-160
Registration: N5714W

2) EXAMINATION PERSONEL:

Mid-Continent Instruments and Avionics

- Mark W Smith

FAA

- Jeffery Price

Location of Inspection:

- Mid-Continent Instruments and Avionics



Wichita, KS 67226

3) ARTICLE INFORMATION:

Article Nomenclature: Turn Coordinator
Model: 1394T100-7Z
Serial Number: E09-10499 (As identified by partial I.D. plate and maintenance log book entry)
Production Date: 05/2009
Sold to: Powell Avionics on 6/2/2009
424 Hanger Road
Fayetteville, NC 28306
Repair History: Mid-Continent Instruments and Avionics has no repair history on this PN/SN.

4) ARTICLE INSPECTION

- Removed subject article from the sealed box as delivered by the FAA representative.
- The Turn Coordinator was in plastic evidence bag which was sealed.



- Visual inspection of article shows significant impact damage.
- The front 1" (display) of the article was missing.

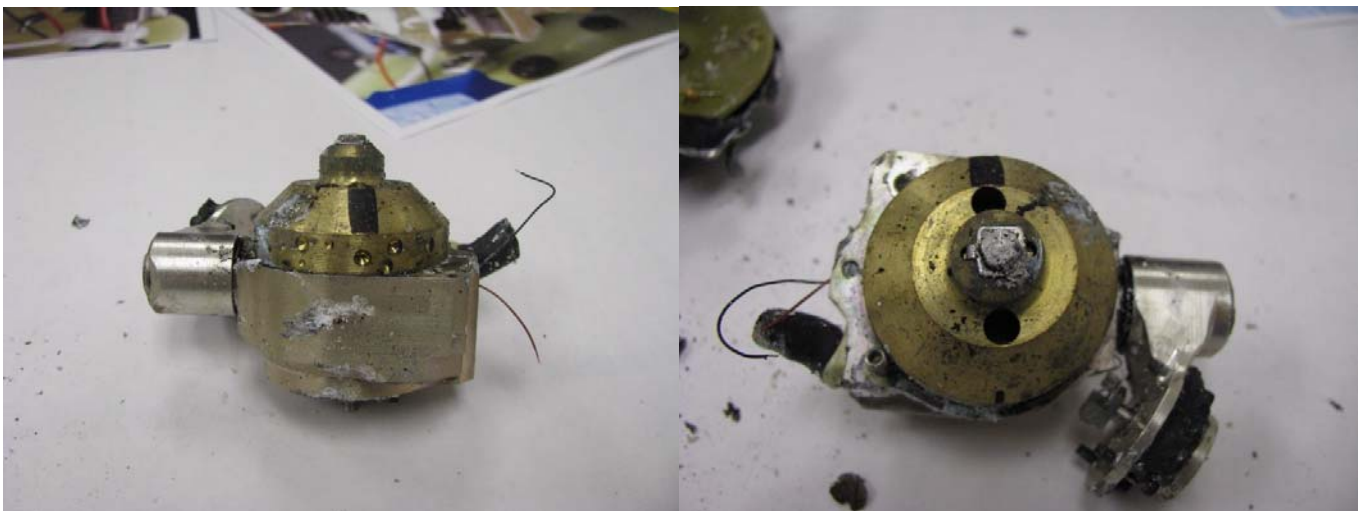


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- The aluminum cover had to be cut away to gain access to the inner assembly.

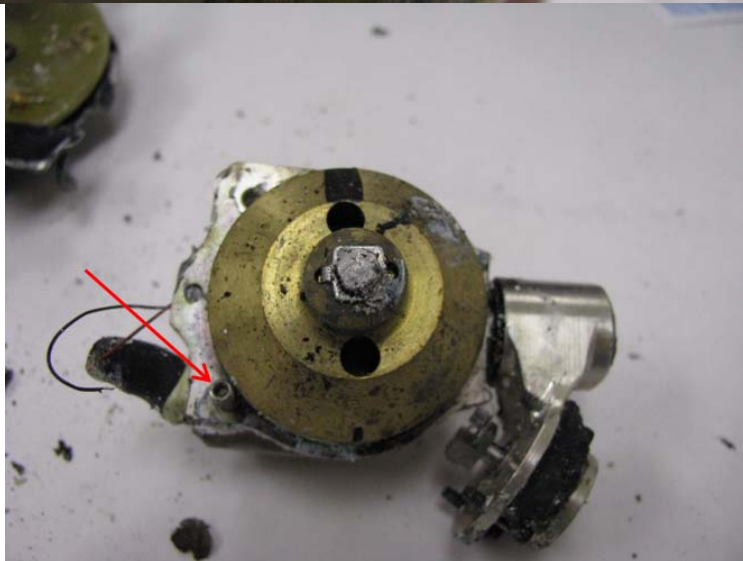
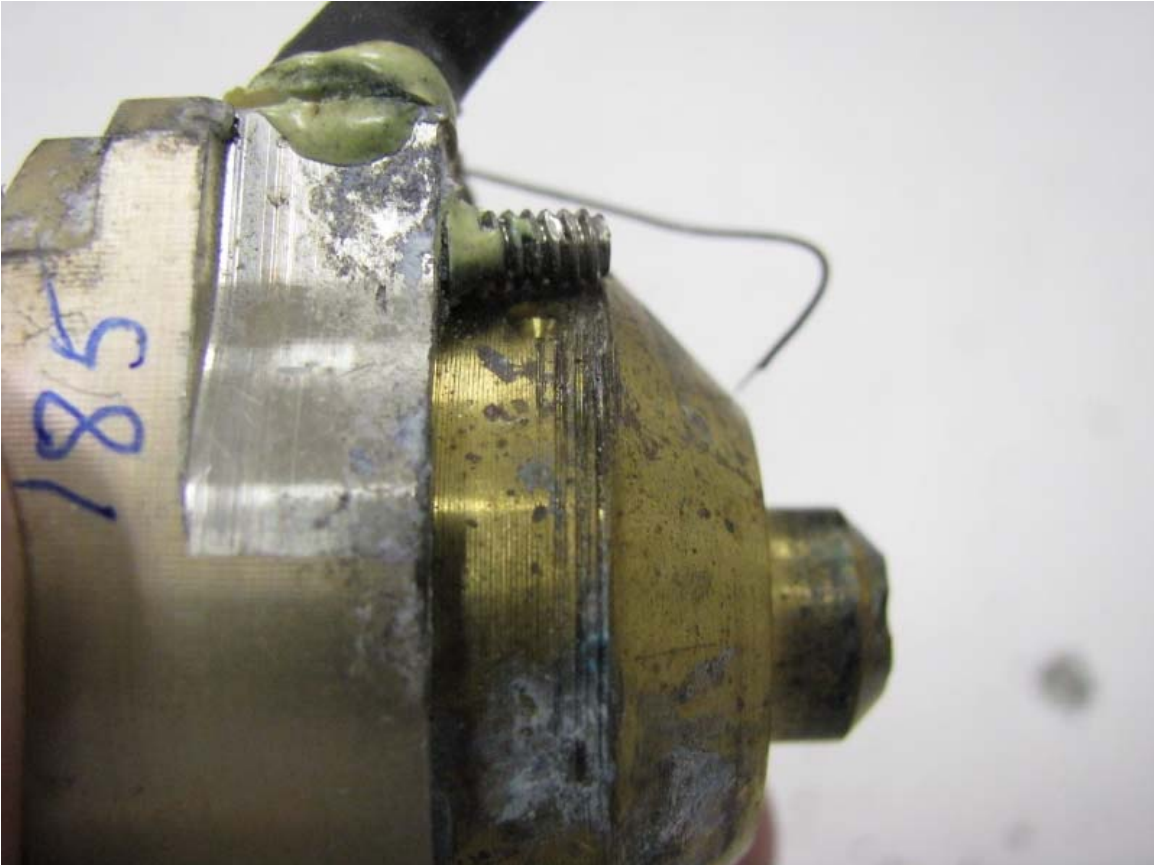


- The inner gimbal assembly was removed.
- Extensive corrosion found.



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- Rotor assembly was examined for evidence of rotation at the time of the accident.
- Evidence of score marks for approximately 1.25" of the 4.5" circumference
- Score marks align with a gimbal balance weight.
- The rotor bearings were free and relatively smooth (some ball dents)



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- An additional score mark was found at a different point of the rotor circumference.



- The stainless steel balance weight/screw was inspected for signs of rotor material (brass). A minute amount of yellow/brass material was seen but photographs were unable to capture.



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- Examined the inside of the case for evidence of rotor (brass) contact with the inside of the case housing.
- Evidence found of brass colored transfer but unable to determine if the rotor was spinning when the transfer occurred.



- After inspection, the Turn Coordinator components were packaged separately and returned to the FAA for return to the NTSB.

Monville Timothy

From: [REDACTED]
Sent: Friday, August 02, 2013 2:00 PM
To: Monville Timothy
Cc: Mark Smith
Subject: Fw: Assistance with NTSB Investigation ERA13FA088
Attachments: 1394T100-7Z Teardown Report.doc

Mr. Monville,

I hereby state that I, Jeffrey D. Price, an FAA Aviation Safety Inspector, was present at Mid-Continent Instruments and Avionics for the evaluation of the Turn Coordinator Model 1394T100-7Z submitted by the NTSB under NTSB Case #ERA13FA088. I have read the attached report prepared by Mark W. Smith of Mid-Continent Instruments and Avionics and I concur with the findings in the report.

I will box up the unit and ship it out today using the UPS shipping label that was enclosed with the unit.

Please let me know if you need anything further from me.

Jeffrey D. Price
Principal Avionics Inspector
FSDO CE-07 Wichita, KS
[REDACTED]
[REDACTED] (fax)

----- Forwarded by Jeffrey Price/ACE/FAA on 08/02/2013 12:49 PM -----

From: Mark Smith [REDACTED] >
ACE-ICT-FSDO-07, Wichita, KS
To: 'Monville Timothy' <monvilt@ntsb.gov>,
Cc: Jeffrey Price/ACE/FAA@FAA
Date: 08/01/2013 09:18 AM
Subject: RE: Assistance with NTSB Investigation ERA13FA088

Tim,

Our evaluation of the 1394T100-7Z is attached. Please let me know if it is acceptable.

Due to the size of this email I will send another email with the sales invoice and some pictures of a new Turn Coordinator for reference.

I also have a video of the teardown which I will mail to you on a CD or thumb drive. Please provide your mailing address.

Thank you