

1. Approving Civil Aviation Authority/Country: FAA/UNITED STATES		2. AUTHORIZED RELEASE CERTIFICATE FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG			3. Form Tracking Number: 55567	
4. Consolidated Instrument & Avionics Co 510 Industrial Ave, Teterboro, NJ 07608 USA				5. Work Order/Contract/ Invoice #: NTSB-WPR20FA016		
6. Item 7. Description		8. Part Number		9. Qty: 10. Serial #		
1 TWIN-TACH INDICATOR		65-29C		1 7468		
11. Status/Work: HIDDEN DAMAGE INSPECTION						
12. Remarks: Refer to Attached Work Order #: 55567 A/C P/N: ECD-072-11 Maintenance with Reference to: TC HOLDER SPECIFICATION DRAWING ECD072 REV.A DATED MAY,10,1988						
1. HIDDEN DAMAGE INSPECTION: AS RECEIVED FOUND S/N 7468 P/N 65-29C Enstrom P/N ECD-072-11. AS ACCOMPANIED WITH ACCIDENT REPORT WPR20FA016 AIRCRAFT REGISTRATION N280F DATED 10/25/2019. FOUND INSTRUMENT IN TWO PARTS RESULTING FROM IMPACT DAMAGE INNER CORE MECHANISM BROKE OUT OF IT'S MOUNTS. THE MECHANISM WAS PRESERVED INTACT BY BACK HALF COVER. INSPECTING FOR AGE, WEAR, CORROSION, DAMAGE TO MECHANICAL MECHANISM, REVEALED BY THIS UNDER THE COVER INSPECTION: A MECHANISM IN GOOD STATE OF PRESERVATION, ALL MECHANICAL PARTS IN ORIGINAL POSITIONS.						
13a. Certifies that the items identified above were manufactured in conformity to: ☐ Approved design data and are in condition for safe operation. ☐ Non-approved design data specified in Block 12.		14a. ☒ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 12; Certifies that, unless otherwise specified in Block 12, the work identified in Block 11 and described in block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.				
13b. Authorized Signature:		13c. Approval Authorization#		14b. Authorized Signature:		
13d. Name (Typed or Printed):		13e. Date (dd/mm/yyyy):		14d. Name (Typed or Printed):		
13f. Date (dd/mm/yyyy):		13g. Date (dd/mm/yyyy):		14e. Date (dd/mm/yyyy):		
				13/JUL/2020		
FAA Form 8130-3 (02-14)		User/ Installer Responsibilities		Installer must cross check eligibility with applicable technical data		
NSN: 0052-00-012-9005						

 CONSOLIDATED INSTRUMENT & AVIONICS 510 Industrial Ave, Teterboro Airport, New Jersey 07608 USA Tel: 201-288-1189 • Fax: 201-288-8006 • eMail: sales@ConsolidatedInstrument.com	
RO/PO: NTSB-WPR20FA016	Date 7/13/2020
Customer: NTSB INVESTIGATION	
ATTENTION ELIOTT SIMPSON	
CustAddress1: 505 SOUTH 336th STREET	
CustAddress2: SUITE 540	
City: FEDERAL WAY, WA. 98003	
State/Province:	Postal Code:
Country:	Contact: NTSB
Nameplate Details Work Order: 55567	
Nomenclature: TWIN-TACH INDICATOR	
OEM Mfr: CONSOLIDATED INSTRUMENT	
OEM P/N: 65-29C	S/N: 7468
OEM Type:	
A/C Mfr: ENSTROM	
A/C P/N: ECD-072-11	
A/C Type: 280F	
Other ID: MANUFACTURED: APRIL/30/1981	
2. Flight ☒ NTSB ACCIDENT HIDDEN DAMAGE INSP.	
Operation: ☐ U.S. GENERAL AVIATION; ☐ EASA;	
☐ U.S. AIRLINE Continuous Airworthiness Program. See 3b.	
3. EASA & ☒ N/A	
FAA AD's:	
3b. Instruct: ASSESSMENT	
3c. Reason Removed: ACCIDENT	
4. Receiving Inspection: SEE HIDDEN DAMAGE INSPECTION GW	
FAA CRS #QS2R120L Receiving Acceptance. Signed - Inspector	

WORK ORDER	55567	Inspection/Work Record Form QCF-134 Rev (06-16)
Customer NTSB INVESTIGATION		
RO/PO: NTSB-WPR20FA016	Date: 7/13/2020	
OEM MFR: CONSOLIDATED INSTRUMENT		
Nomen: TWIN-TACH INDICATOR		
OEM P/N: 65-29C	S/N: 7468	
A/C P/N: ECD-072-11	OEM Type:	
6. Hidden Damage ☒ Apparent/Accidental Damage Results: see 7.		
7. Preliminary Inspection & Teardown: Article Preservation / Defects / Results		
2. INTERNAL INSPECTION: UNDER CLOSE VISUAL STUDY A COMPARISON TO DRAWING AND LIKE P/N DETERMINED NO INTERNAL PARTS SHIFTED, CRACKED, DAMAGED EXCEPT THE CASE HOLDING INSTRUMENT ONTO HELICOPTER MOUNT BROKE OUT OF THE FOUR MOUNTS WHICH IS THE TOTAL OF FOUR MOUNTS AS PER DESIGN A RESULT OF IMPACT. NO FURTHER DISASSEMBLY PERFORMED SINCE IT APPEARED/WAS FUNCTIONAL THRU HAND TOOL ROTATING THE ROTOR & ENGINE INPUT DRIVES.		
3. TEST RESULTS: HOOKED UP ENGINE DRIVE OF INDICATOR TO TESTER TE-347 DRIVE METER 0-4000 RPM PERFORMS TO ENSTROM SPECIFICATIONS TESTS AIRWORTHY		
* HOOKED UP ROTOR DRIVE TO TESTER TE-347 PERFORMED TO ENSTROM SPECIFICATIONS TESTS AIRWORTHY. 0-400 RPM		
* HOOKED UP ENGINE AND ROTOR SIMULTANEOUSLY AS IN NORMAL FLIGHT TO TESTER TE-347 0-4000/0-400 RPM PERFORMED TO ENSTROM SPECS TEST AIRWORTHY.		
FINAL DISPOSITION OTHER THAN THE BREAKING OFF OF CASE ON IMPACT THIS IS STILL AN AIRWORTHY MECHANISM. OUR OBSERVATIONS ARE THAT THIS S/N 7468 WAS AIRWORTHY AT MOMENT OF IMPACT *		
		
INSPECTOR ERIC JOHANNESSEN		
ACCOUNTABLE MANAGER		
CERTIFIED REPAIRMAN		
Stamp C. R. Number	Signed - Certificated Repairman Inspecting Work	Date



510 Industrial Ave, Teterboro Airport, New Jersey 07608 USA
Tel: 201-288-1189 • Fax: 201-288-8006 • eMail: sales@ConsolidatedInstrument.com

RO / PO: NTSB Date 7/13/2020
Customer: NATIONAL TRANSPORTATION SAFETY BOARD

CustAddress1: 505 S. 336th STREET, STE 540

CustAddress2:

City: FEDERAL WAY

State/Province: WA Postal Code: 98003

Country: US Contact: ELLIOTT SIMPSON, JOE

Work Order: 55567

Nameplate Details

Nomenclature: TWIN-TACH INDICATOR

OEM Mfr: CONSOLIDATED INSTRUMENT

OEM P/N: 65-29C S/N: 7468

OEM Type: ENSTROM

A/C Mfr: ECD-072-11

A/C P/N:

WORK ORDER

55567

Inspection/Work Record
Form QCF-134 Rev (06-16)

Customer: NATIONAL TRANSPORTATION SAFETY BOARD

RO / PO: NTSB

Date: 7/13/2020

OEM MFR: CONSOLIDATED INSTRUMENT

Nomen: TWIN-TACH INDICATOR

OEM P/N: 65-29C

S/N: 7468

A/C P/N: ECD-072-11

OEM Type

5. SUP Inspection ☐ Visually Acceptable ☒ Suspect: see 7.

6. Hidden Damage ☐ N/A ☒ Apparent/Accidental Damage Results: see 7.

7. Preliminary Inspection & Teardown: Article Preservation / Defects / Results

EXCEPT AS NOTED ON HIDDEN DAMAGE REPORT.

"TESTED & CERTIFIED
PER MANUFACTURER
SPECIFICATIONS"

FOR UNMOUNTED MECHANISM ONLY.

ENGINE GREEN 2900-3050 RPM

ROTOR GREEN 332-385 RPM

ROTOR TO ENGINE RATIO 1:8.71

ENG/ROTOR DRIVES;

COUNTER CLOCKWISE

*NOTE- ENGINE DRIVER COMMON INPUT RPM BOTH ROTOR & ENGINE MARRIED CALIBRATION

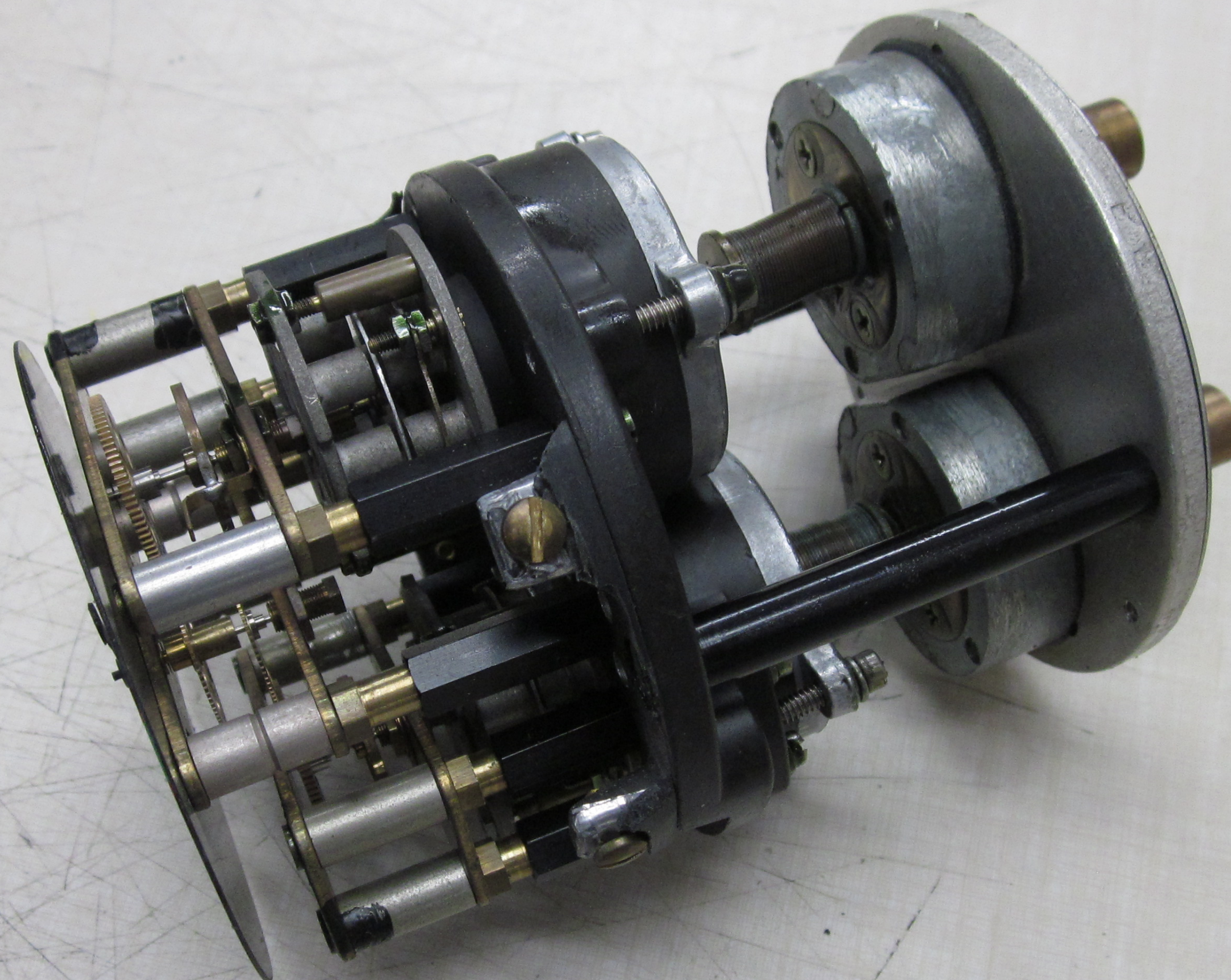
TESTER RPM	ENG. SCALE	TOL. MINIMUM	TOL. MAXIMUM	RESULTS	EQUIV. ROTOR	ACCEPTED
0	0	-25	+25	0 ✓	0	0 ✓
600	600	550	650	618 ✓	68	70 ✓
1200	1200	1150	1250	1215 ✓	137	139 ✓
1800	1800	1775	1825	1805 ✓	206	207 ✓
2400	2400	2375	2425	2400 ✓	275	275 ✓
2900	2900	2875	2925	2898 ✓	333 +-5 RPM	332 ✓
3000	3000	2975	3025	3009 ✓	344 +-5 RPM	347 ✓
3353	ROTOR ONLY	3328	3398	3355 ✓	385 +-5 RPM	386 ✓
3500	3500	3475	3525	3519 ✓	401	404 ✓
4000	4000	3950	4025	4040 ✓	459	460 ✓

MEETS FUNCTIONAL REQUIREMENT S/N 7468

DIFERENTIAL DATA SHEET FOR ENSTROM ECD 072-11/65-29C REV. A MAY 10, 1988



ERIC JOHANNESSEN



07/13/2020 11:40

ATED
STER

CIC#347



DISPLAYED OUTPUT DRIVE:X2
4POLE-TACH GENERATOR

ON
OFF
DISPLAY

RUN

STOP



07/13/2020 11:44