

No: 000272

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Date: 09-15-82

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Send To: 912 NAVCOM KIT

C-0002

C CHRISTEN INDUSTRIES INC.  
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Subject: RETENTION OF EDO-AIRE  
RADIOS IN EAGLE II  
AIRCRAFT

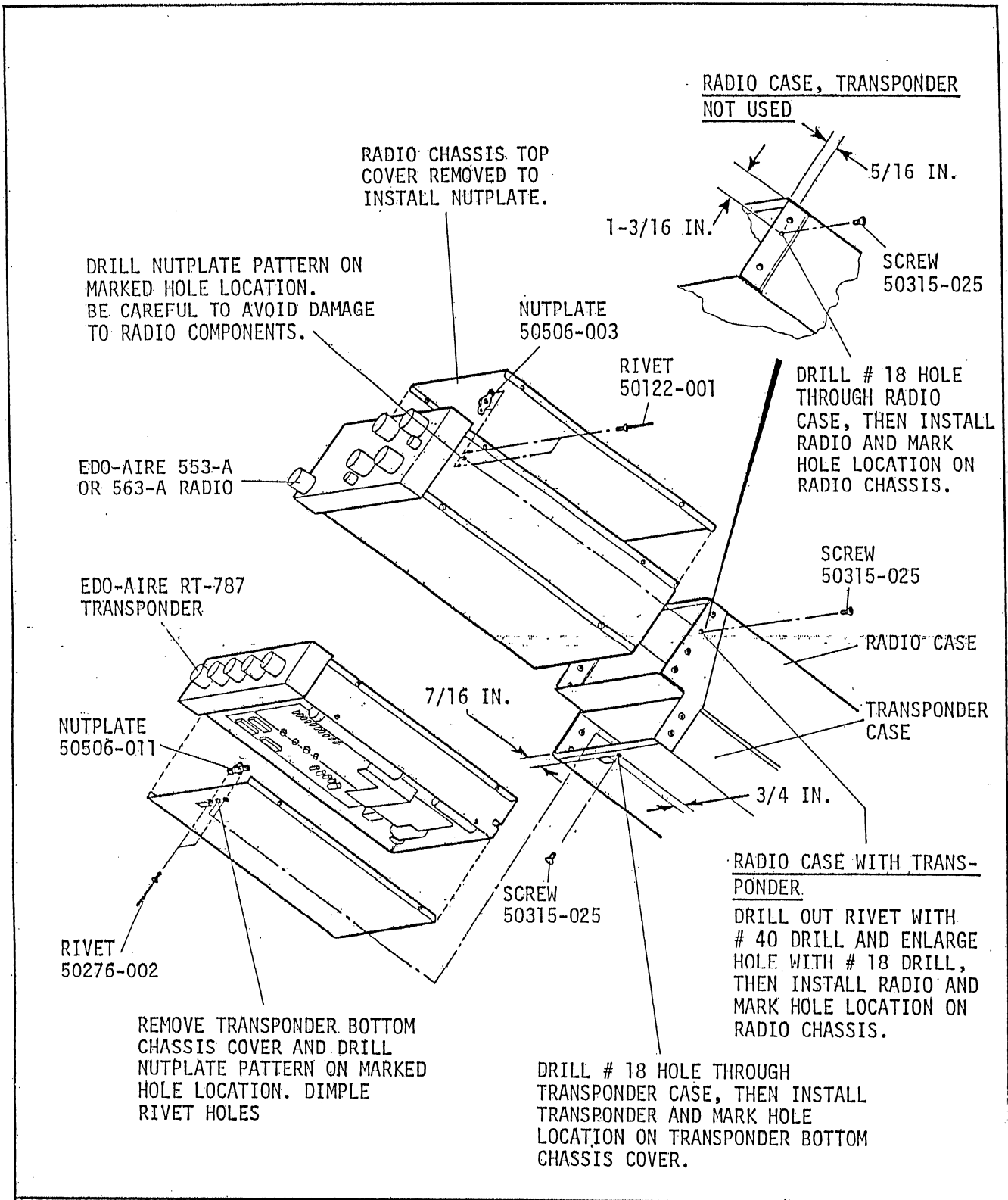
Edo-Aire radios are currently used in the 912 Series radio kits in place of the Narco radios used previously. These radios are retained in their support housing by a tab which is rotated and drawn forward into engagement with a slot in the top of the housing by a screw on the front of the radio.

When Edo-Aire radios were first used, several Eagle builders reported that they had failed to engage the radio retaining tab properly and that their Edo-Aire radios had come out of the support housing during aerobatic flight. In response to these events, the tab normally supplied as a part of the radio was replaced with a tab of Christen manufacture which features a hook at one end to engage the slot in the housing more positively. This radio retaining arrangement was tested thoroughly and it has been used for several years in the factory demonstrator aircraft and the Eagles Team aircraft.

An Eagle builder whose aircraft has the current hook-tab retaining system reported recently that during performance of inverted flight with moderately high negative G-loads his radio came out of the housing with sufficient momentum to injure his hand and to completely penetrate the canopy bubble. The builder is confident that the radio retaining tab was engaged properly and that the tab must have failed, but the radio was lost so this cannot be verified. Failure of the tab is inconsistent with factory testing and aerobatic flight experience.

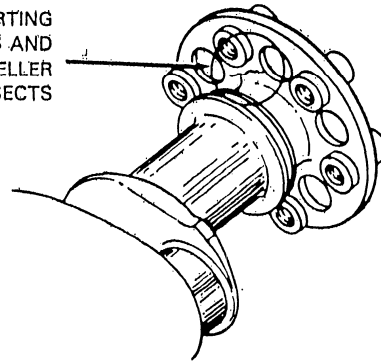
Although we cannot confirm any inadequacy in the current radio retention system, we want to ensure that there is no possibility of a radio coming free from its support housing during flight, regardless of builder attentiveness in engaging the radio retention system. Therefore, we have added a screw and nutplate retaining system to both the 912 Navcom Kit and the 912-T Transponder Kit. In this system a nutplate is mounted on the inside surface of the radio chassis and a screw extends through the sidewall of the radio support housing to engage the nutplate. The arrangement and installation instructions are shown on the enclosed copy of Engineering Sketch X-90151. The parts for this retention system will be included in all future 912 Kits, and parts are enclosed for retrofit to aircraft whose 912 Kits have already been delivered.

ENCLOSURES: 1 EA 50506-003, 1 EA 50506-011, 2 EA 50122-001, 2 EA 50276-002,  
2 EA 50315-025, 1 EA ENGINEERING SKETCH X-90151



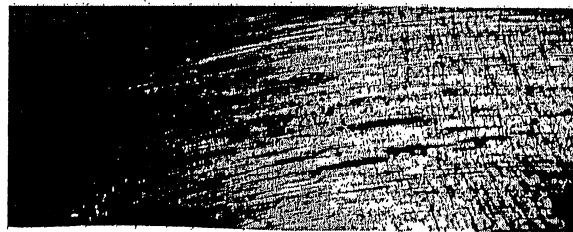
UNLESS OTHERWISE SPECIFIED:  TOLERANCES: FRAC. ± 1/64 DEC. XXX ± .005 ANGLES ± 0° 30'  DIMENSIONS IN INCHES  DO NOT SCALE DRAWING	MATERIAL AND CONDITION			<b>CHRISTEN</b> <small>CHRISTEN INDUSTRIES · HOLLISTER, CALIFORNIA</small>		
	NOTED					
	FINISH			TITLE <b>RADIO RETAINING SYSTEM</b>		
	NONE					
DRAWN BY	DATE	PROJECT	APPROVED BY <i>[Signature]</i> DATE 9-2-82			
I. CLEDE	8-31-82	EAGLE II AIRCRAFT				

LOOK CLOSELY FOR CRACKS STARTING BETWEEN THE LIGHTENING HOLES AND ON THE BACK OF THE PROPELLER FLANGE WHERE THE FILLET INTERSECTS THE FLANGE AND CRANKSHAFT.



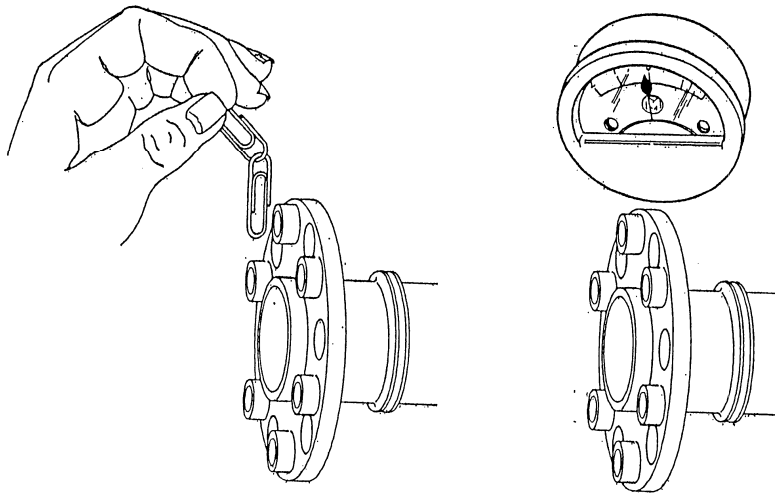
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Figure 1. Rear View of Propeller Mounting Flange Showing Area of Lightening Holes.



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Figure 2. 10X Magnified View Showing Appearance of Area Cracked Due to Abnormal Loading Imposed on the Propeller Flange During Periods of Aerobatic Maneuvers.



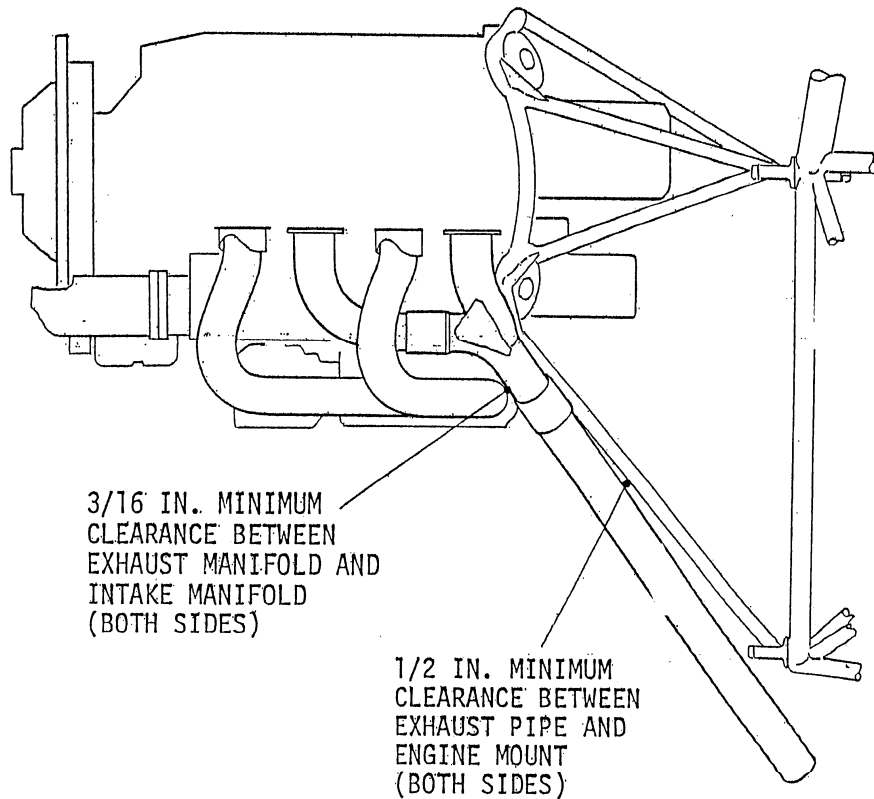
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A rotating, magnetized propeller flange could set up a magnetic field strong enough to magnetize check valves in the hydraulic lifters and to interfere with flux fields in the magnetos and avionics.

Figure 3. Residual Magnetism in the Propeller Flange can be Detected with a Field Indicator or a Suspended Steel Paper Clip.

NOTE: Revision "C" revises part numbers and text.

21818, 21818A, 21818B, 24115, 24115A — These numbers for Textron Lycoming reference only.



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	NOTED					
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	NONE			EXHAUST STACK CLEARANCE		
DRAWN BY	DATE	PROJECT	CODE	NO.	ISSUE	
I. CLEDE	9-8-82	EAGLE II AIRCRAFT	PA	X-90155		
APPROVED BY	DATE					
<i>Wep</i>	9-10-82					