

~~UNCLASS~~
CF-105 SERVICE DATA ~~AVES~~

29 Sept 66
Signature
Date
Electronics ~~AVES~~

J4 Gyrosyn Compass ~~AVES~~

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Classification cancelled / Changed to UNCLASS

By authority of AVRS

Date 27 Sept 68

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Unit / Rank / Appointment AVRS S

Section 47
ELECTRONICS

J4 GYROSYN COMPASS

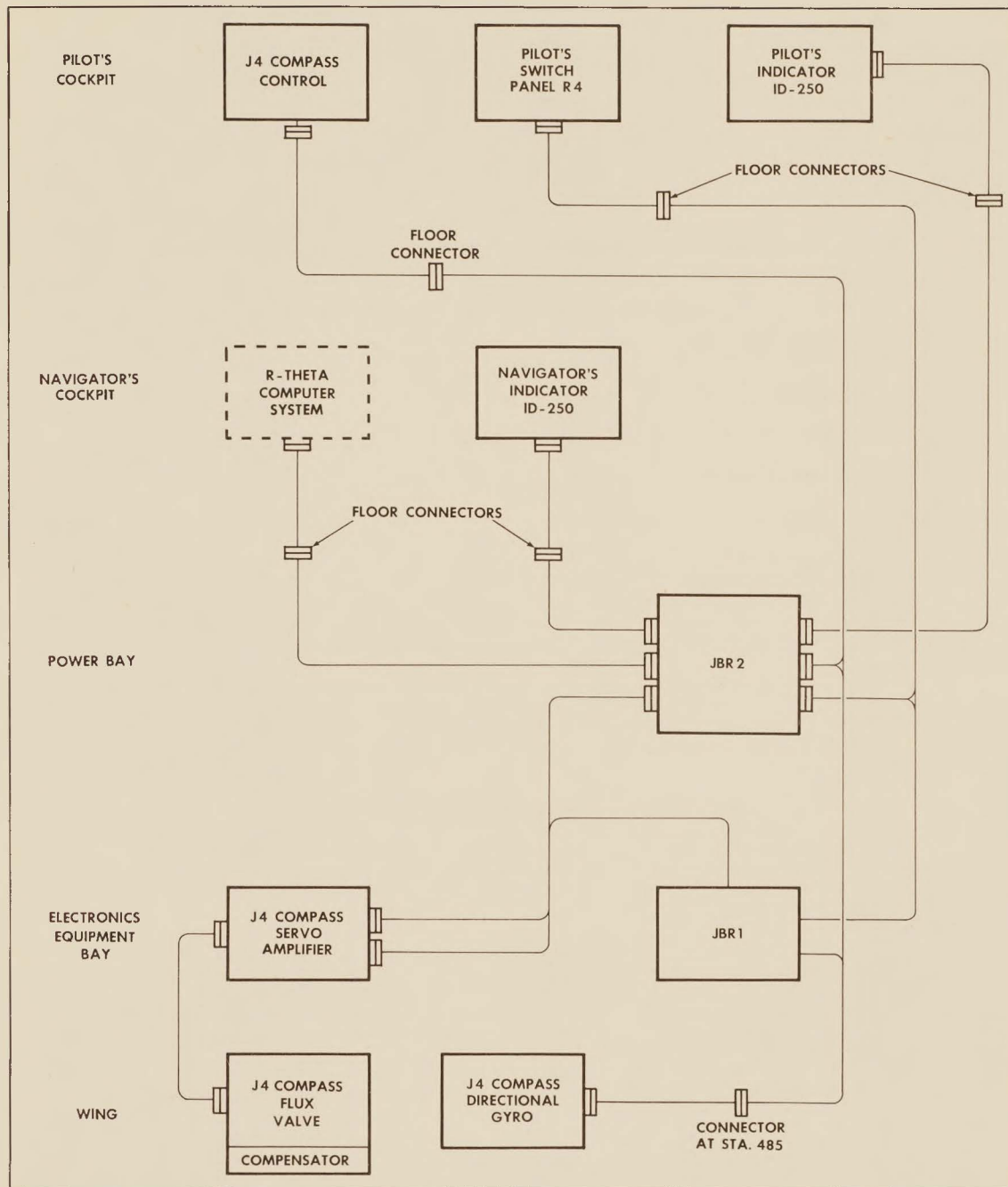
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7M3-7018-1

FIG. 1 J4 GYROSYN COMPASS - GENERAL ARRANGEMENT

7M1-3413-2-2

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SYSTEM DATA SHEET

SYSTEM	SUB-SYSTEM	AIRCRAFT EFFTY	REF. NO.
ELECTRONICS	J4 GYROSYN COMPASS	25201	13-9
<p>General</p> <p>1. The J4 Gyrosyn Compass System provides continuously corrected magnetic north heading information which is supplied to two Course Indicators Type ID-250/ARN and to the DR Computer of the R-Theta Navigation Computer System.</p> <p>2. The system is comprised of the following component units:</p> <p>(a) Control Panel.</p> <p>(b) Directional Gyro.</p> <p>(c) Flux Valve and Compensator.</p> <p>(d) Servo-amplifier.</p> <p>Operation</p> <p>3. Deviation from magnetic north is sensed in the form of electrical indications by the flux valve and amplified to a usable level by the servo-amplifier. The output of the servo-amplifier is integrated by the directional gyro control to correct the gyro and maintain it at the magnetic north heading.</p> <p>4. The directional gyro heading is transmitted by an autosyn system to two Course Indicators, Type ID 250/ARN, located one in each cockpit. A SET switch is provided on the Control Panel to synchronize the indicators. The heading information is also supplied to a positional-servo system which transmits the heading reference to the R-Theta DR Computer.</p> <p>5. In certain areas, such as Polar regions, the magnetic deviation changes rapidly, causing the corrections from the flux valve to become erratic. To isolate the flux valve in such areas, a switch marked MAG-DG is provided. The switch is located on the Control Panel and is normally selected to MAG i.e. magnetic. Selecting the switch to DG, i.e. directional gyro, permits the system to function as a directional gyro, but subject to drift.</p> <p>6. In addition to the SET switch and MAG-DG switch, a caging switch, N-S latitude switch and a latitude dial are located on the Control Panel. The caging switch marked NORMAL-AEROBATICS, cages the gyro when switched to the AEROBATICS position. This prevents damage to the gyro during violent aircraft manoeuvres. The N-S latitude switch is for use in northern or southern hemispheres as applicable and the LATITUDE dial is for setting flight latitude.</p> <p>7. The system operates on 27.5 volts d-c, 115 volts a-c 400 cps and 26 volts a-c 400 cps.</p>			
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS	SUB-SYSTEM J4 GYROSYN COMPASS	COMPONENT Control Panel	REF. NO. 13-9-1
AVRO PART NO.	MANUFACTURER Kearfott (RCAF Supply)	MAN'FR'S PART NO. 423050-2	AIRCRAFT EFFECTIVITY 25201
OVERHAUL LIFE : KNOWN- ESTIMATED- 500 hours			
FUNCTION Mounts the J4 Compass System controls.			
LOCATION Front cockpit - RH console.			
ACCESS Remove from console by releasing four Dzus fasteners.			MEN X MINUTES
REPLACEMENT PROCEDURE Fit and secure one connector. (R1039-1). Secure panel to console with four Dzus fasteners.			MEN X MINUTES

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INSPECTION		MEN X MINUTES	
<p>Check panel for security and cleanliness. Check that the connector is securely and properly fitted.</p>			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
SPECIAL TOOLS TO REMOVE OR SERVICE			
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS		SUB-SYSTEM J4 GYROSYN COMPASS		COMPONENT Directional Gyro		REF. NO. 13-9-2	
AVRO PART NO.		MANUFACTURER Kearfott (RCAF Supply)		MAN'FR'S PART NO. 423040-2		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION Stabilizing and Directional Reference Unit.							
LOCATION Dorsal STA. 505.							
ACCESS Remove dorsal electronics access panel - 6 latches.						MEN X MINUTES	
REPLACEMENT PROCEDURE Fit and secure unit to shockmount with two mounting screws and two wing nuts. Fit and secure connector (R1050-2).						MEN X MINUTES	

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INSPECTION Check unit for security of mounting. Check that the connector is securely and properly fitted.							MEN X MINUTES		
FUNCTIONAL CHECKS 							MEN X MINUTES		
GROUND HANDLING AND GROUND TEST EQUIPMENT									
SPECIAL TOOLS TO REMOVE OR SERVICE									
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS		SUB-SYSTEM J4 GYROSYN COMPASS		COMPONENT Flux Valve		REF. NO. 13-9-3	
AVRO PART NO.		MANUFACTURER Sperry (RCAF Supply)		MAN'FR'S PART NO. 620359		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To sense, in the form of an electrical indication, deviation from magnetic north. These indications are transmitted to the servo-amplifier.							
LOCATION Leading edge of RH inner wing.							
ACCESS Remove access panel located in leading edge of RH wing - 54 screws.						MEN X MINUTES	
REPLACEMENT PROCEDURE Secure unit to mounting with three mounting screws. Connect electrical wiring. Refit access panel in leading edge of RH inner wing - 54 screws.						MEN X MINUTES	

TM-313-2-5

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INSPECTION								MEN X MINUTES	
Check flux valve for security of mounting and damage.									
FUNCTIONAL CHECKS								MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT									
SPECIAL TOOLS TO REMOVE OR SERVICE									
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS		SUB-SYSTEM J4 GYROSYN COMPASS		COMPONENT Flux Valve Compensator		REF. NO. 13-9-4	
AVRO PART NO.		MANUFACTURER Sperry (RCAF Supply)		MAN'FR'S PART NO. 620783		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE :		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To compensate for constant magnetic distortion introduced by aircraft structure or electrical apparatus.							
LOCATION Mounted on the flux valve which is located in the leading edge of RH inner wing.							
ACCESS Remove access panel in leading edge of RH inner wing - 54 screws.						MEN X MINUTES	
REPLACEMENT PROCEDURE Remove access panel in leading edge of RH inner wing - 54 screws. Fit Compensator to J4 Compass Flux Valve. Refit access panel in leading edge of RH inner wing - 54 screws.						MEN X MINUTES	

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INSPECTION Check compensator for security of mounting.								MEN X MINUTES	
FUNCTIONAL CHECKS								MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT									
SPECIAL TOOLS TO REMOVE OR SERVICE									
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS		SUB-SYSTEM J4 GYROSYN COMPASS		COMPONENT Servo-amplifier		REF. NO. 13-9-5	
AVRO PART NO.		MANUFACTURER Kearfott (RCAF Supply)		MAN'FR'S PART NO. 423060-2		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE :		KNOWN-		ESTIMATED-		500 hours	
FUNCTION Amplifies electrical indications received from the J4 compass flux valve.							
LOCATION Electronics Equipment Bay - LH side.							
ACCESS Release and lower the electronics equipment bay centre access door - 33 camlocs.						MEN X MINUTES	
REPLACEMENT PROCEDURE Clamp amplifier to mounting by securing wing-nut. Fit and secure three connectors. (R1028-1, R1024-4, R1024-3).						MEN X MINUTES	

WM-3913-2-5

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INSPECTION		MEN X MINUTES	
<p>Check that the connectors are securely and properly fitted.</p>			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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COMPONENT DATA SHEET

SYSTEM ELECTRONICS		SUB-SYSTEM J4 GYROSYN COMPASS		COMPONENT Servo-amplifier Mounting		REF. NO. 13-9-6	
AVRO PART NO.		MANUFACTURER Kearfott (RCAF Supply)		MAN'FR'S PART NO. 323478		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION Shockmounts the J4 compass Servo-amplifier.							
LOCATION Electronics Equipment Bay - LH side.							
ACCESS Release and lower the electronics equipment bay centre access door - 33 camlocs.						MEN X MINUTES	
REPLACEMENT PROCEDURE Fit mounting to airframe with four mounting bolts.						MEN X MINUTES	

FM-3413-2-5

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INSPECTION Check that the mounting is fitted securely and is not distorted.								MEN X MINUTES	
FUNCTIONAL CHECKS								MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT									
SPECIAL TOOLS TO REMOVE OR SERVICE									
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