

CF-105 SERVICE DATA

Section - 33
Electrical System - Canopies

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ELECTRICAL SYSTEM

CANOPIES

Section 33.

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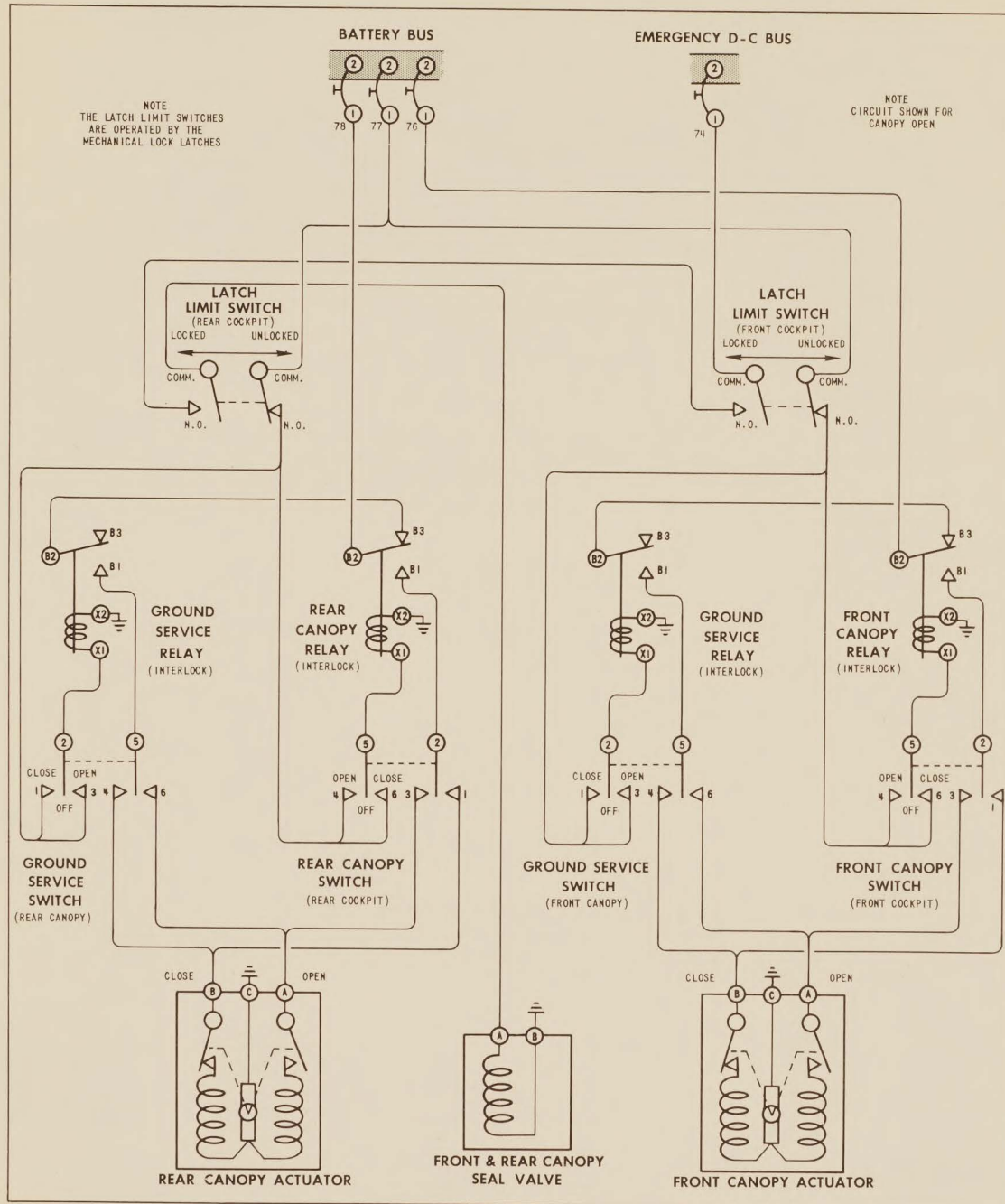
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FIG 1 CANOPY ACTUATION SCHEMATIC

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SYSTEM DATA SHEET

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SYSTEM	SUB-SYSTEM	AIRCRAFT EFFTY	REF. NO.
ELECTRICAL	CANOPIES	25201	11-10
<p style="text-align: center;">DESCRIPTION</p> <p>General</p> <p>1. The front and rear canopies are opened and closed by individual electric actuators operated by a power supply taken from the Battery bus. The inflation and deflation of the canopy seals is controlled by a solenoid valve operated by a power supply taken from the Emergency D-C bus. The canopies are mechanically locked when in the closed position.</p> <p>Canopy Actuation</p> <p>2. Each canopy is controlled by two double-pole, double-throw switches having OPEN-OFF-CLOSE positions. One switch is mounted in each cockpit, and the other two are mounted externally on the canopy arch for ground operation. Interlocking relays are provided to prevent the external switches from acting in opposition to the internal switches.</p> <p>3. The canopy actuators are of the linear type and contain load limit switches to cut off the electrical supply when the canopies are in the fully open or fully closed positions.</p> <p>4. Limit switches actuated by the mechanical lock latches prevent the D-C supply being fed to the actuators before the latches are unlocked.</p> <p>5. An emergency mechanical release is provided for the mechanical lock latches, as the external switches do not override the latches.</p> <p>6. The canopies should only be closed and opened once after each flight using the aircraft battery. If further operation is required a ground power supply should be used.</p> <p>Canopy Seal Inflation</p> <p>7. The canopy seal inflation valve is solenoid operated by micro-switches actuated by the canopy mechanical lock latches. The solenoid is energized and the canopy seals inflated when the second canopy is latched, and is de-energized to deflate the seals when the first canopy is unlatched.</p>			
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SYSTEM ELECTRICAL		SUB-SYSTEM CANOPIES		COMPONENT Front Canopy Actuation Switch		REF. NO. 11-10-1	
AVRO PART NO.		MANUFACTURER Cutler-Hammer		MAN'F'S PART NO. 8834K4		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To complete the supply circuits for the rear canopy actuator.							
LOCATION On panel E10 LH console.							
ACCESS Unobstructed when panel E10 is released from the console.						MEN X MINUTES	
REPLACEMENT PROCEDURE Mount switch on panel E10. Secure circuit connections. Refit panel E10 to LH console - 4 mounting screws.						MEN X MINUTES	

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INSPECTION Operate the switch and check that the lever action is smooth and that the make and break is not sluggish or rough.							MEN X MINUTES	
FUNCTIONAL CHECKS							MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT								
SPECIAL TOOLS TO REMOVE OR SERVICE								
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SYSTEM ELECTRICAL		SUB-SYSTEM CANOPIES		COMPONENT Rear Canopy Actuation Switch		REF. NO. 11-10-2	
AVRO PART NO.		MANUFACTURER Cutler-Hammer		MAN'FR'S PART NO. 8834K4		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE :		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To complete the power supply for the rear canopy actuator.							
LOCATION On panel E19 LH console.							
ACCESS Unobstructed when panel E19 is released from the console.						MEN X MINUTES	
REPLACEMENT PROCEDURE Mount switch on panel E19. Secure circuit connections. Refit panel E19 to LH console - 4 quick fasteners.						MEN X MINUTES	

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INSPECTION Operate the switch and check that the lever action is smooth and that the make and break is not sluggish.		MEN X MINUTES	
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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SYSTEM ELECTRICAL	SUB-SYSTEM CANOPIES	COMPONENT Canopy External Actuation Switches	REF. NO. 11-10-3		
AVRO PART NO. CS-S-159-7	MANUFACTURER	MAN'FR'S PART NO.	AIRCRAFT EFFECTIVITY 25201		
OVERHAUL LIFE: KNOWN- ESTIMATED- 500 hours					
FUNCTION To facilitate operating the front and rear canopies externally. The switches complete the supply to the canopy actuators.					
LOCATION On the LH side of the front canopy arch. On the LH side of the rear canopy arch.					
ACCESS Unobstructed.			MEN X MINUTES <table border="1"> <tr><td></td><td></td></tr> </table>		
REPLACEMENT PROCEDURE Mount the switch on the canopy arch. Fit and secure the circuit wires.			MEN X MINUTES <table border="1"> <tr><td></td><td></td></tr> </table>		

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INSPECTION							MEN X MINUTES	
<p>Clean externally. Operate the switch and check that the lever action is smooth and that the make and break is not sluggish.</p>								
FUNCTIONAL CHECKS							MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT								
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SYSTEM ELECTRICAL		SUB-SYSTEM CANOPIES		COMPONENT Latch Limit Switches, Front and Rear		REF. NO. 11-10-4	
AVRO PART NO. CS-S-152		MANUFACTURER		MAN'FR'S PART NO.		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-			
<p>FUNCTION</p> <p>To interrupt the power supply to the canopy actuator and complete the power supply to the canopy seal valve when the canopies are locked.</p>							
<p>LOCATION</p> <p>Front cockpit; on index plate aft of the front canopy latch lever. Rear cockpit; on index plate aft of the rear canopy latch lever.</p>							
ACCESS Unobstructed in the front and rear cockpits.						MEN X MINUTES	
REPLACEMENT PROCEDURE Assemble actuator and switch. Install on index plate aft of latch lever, with two mounting screws. Connect wires. Install switch cover.						MEN X MINUTES	

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INSPECTION		MEN X MINUTES	
Check for security of mounting and electrical connection. Check switch actuator for distortion.			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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SYSTEM ELECTRICAL	SUB-SYSTEM CANOPIES	COMPONENT Interlock Relays, Internal (2)	REF. NO. 11-10-5
AVRO PART NO. CSR-122	MANUFACTURER	MAN'FR'S PART NO.	AIRCRAFT EFFECTIVITY 25201
OVERHAUL LIFE: KNOWN- ESTIMATED- 500 hours			
FUNCTION To prevent the internal and external canopy actuation switches operating the canopy actuator in opposition.			
LOCATION E6 relay panel on roof of nose wheel well.			
ACCESS Unobstructed when cover of E6 is removed.			MEN X MINUTES
REPLACEMENT PROCEDURE Mount relay in E6 using four screws. Fit and secure circuit connections. Refit cover of E6 - 4 quick fasteners.			MEN X MINUTES

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INSPECTION								MEN X MINUTES	
Check circuit connections for security.									
FUNCTIONAL CHECKS								MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT									
SPECIAL TOOLS TO REMOVE OR SERVICE									
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SYSTEM ELECTRICAL	SUB-SYSTEM CANOPIES	COMPONENT Interlock Relays, External (2)	REF. NO. 11-10-6
AVRO PART NO. CSR-122	MANUFACTURER	MAN'FR'S PART NO.	AIRCRAFT EFFECTIVITY 25201
OVERHAUL LIFE: KNOWN- ESTIMATED- 500 hours			
FUNCTION To prevent the external and internal canopy actuation switches operating the canopy actuator in opposition.			
LOCATION E3 in nosewheel well, RH side.			
ACCESS Unobstructed when cover of E3 is removed.			MEN X MINUTES
REPLACEMENT PROCEDURE Mount relay in E3 using four mounting screws. Fit and secure circuit connections. Refit cover of E3 - 4 quick fasteners.			MEN X MINUTES

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INSPECTION		MEN X MINUTES	
Check circuit connections for security.			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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SYSTEM ELECTRICAL		SUB-SYSTEM CANOPIES		COMPONENT Front Canopy Actuator		REF. NO. 11-10-7	
AVRO PART NO. 7-1152-9		MANUFACTURER Winnett-Boyd Airborne Accessories		MAN'FR'S PART NO. E1600 N48-1		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To open and close the front canopy.							
LOCATION Front cockpit - between the base of the canopy and the seat bulkhead.							
ACCESS Unobstructed when the front canopy is open.						MEN X MINUTES	
REPLACEMENT PROCEDURE Insert pip-pin holding actuator to canopy. Refit nut and bolt securing actuator to seat bulkhead. Fit and secure electrical connector.						MEN X MINUTES	

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INSPECTION							MEN X MINUTES	
Check actuator for security. Check that the electrical connector is securely and properly fitted.								
FUNCTIONAL CHECKS							MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT								
SPECIAL TOOLS TO REMOVE OR SERVICE								
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SYSTEM ELECTRICAL		SUB-SYSTEM CANOPIES		COMPONENT Rear Canopy Actuator		REF. NO. 11-10-8	
AVRO PART NO. 7-1152-9		MANUFACTURER Winnett-Boyd Airborne Accessories		MAN'FR'S PART NO. E1600 N48-1		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE: KNOWN-				ESTIMATED- 500 hours			
FUNCTION To open and close the rear canopy.							
LOCATION Rear cockpit - between the base of the canopy and the seat bulkhead.							
ACCESS Unobstructed when the rear canopy is open.						MEN X MINUTES	
REPLACEMENT PROCEDURE Insert pip-pin holding actuator to canopy. Refit nut and bolt securing actuator to seat bulkhead. Fit and secure electrical connector.						MEN X MINUTES	

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INSPECTION		MEN X MINUTES	
<p>Check that the actuator is securely mounted. Check that the electrical connector is securely and properly fitted.</p>			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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SYSTEM ELECTRICAL	SUB-SYSTEM CANOPIES	COMPONENT Canopy Seal Valve	REF. NO. 11-10-9
AVRO PART NO. 7-1852-14	MANUFACTURER Surface Combustion	MAN'FR'S PART NO. 30098	AIRCRAFT EFFECTIVITY 25201
OVERHAUL LIFE: KNOWN- ESTIMATED- 500 hours			
FUNCTION Permits entry of air pressure to inflate the canopy seal.			
LOCATION Rear cockpit bulkhead.			
ACCESS Remove panel on underside of the fuselage aft of the rear cockpit bulkhead.			MEN X MINUTES
REPLACEMENT PROCEDURE Fit valve to structure - 4 mounting screws. Fit and secure connector. Refit access panel - 76 x 3/16 inch screws.			MEN X MINUTES

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INSPECTION		MEN X MINUTES	
Check that the connector is securely and properly fitted.			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
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