

Section 5
CF-105 SERVICE DATA

By authority of

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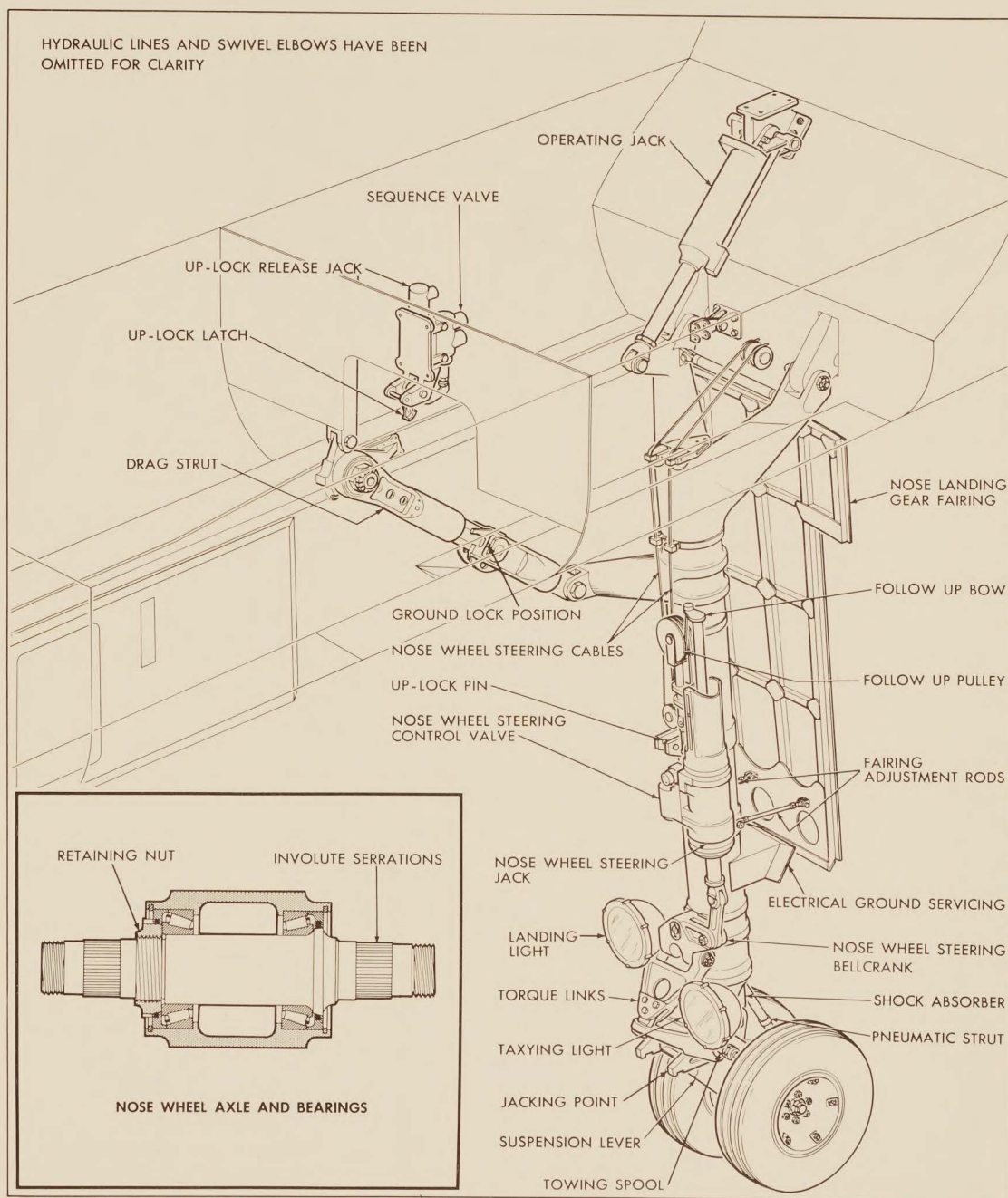
Nose Landing Gear

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FIG. 1 NOSE LANDING GEAR

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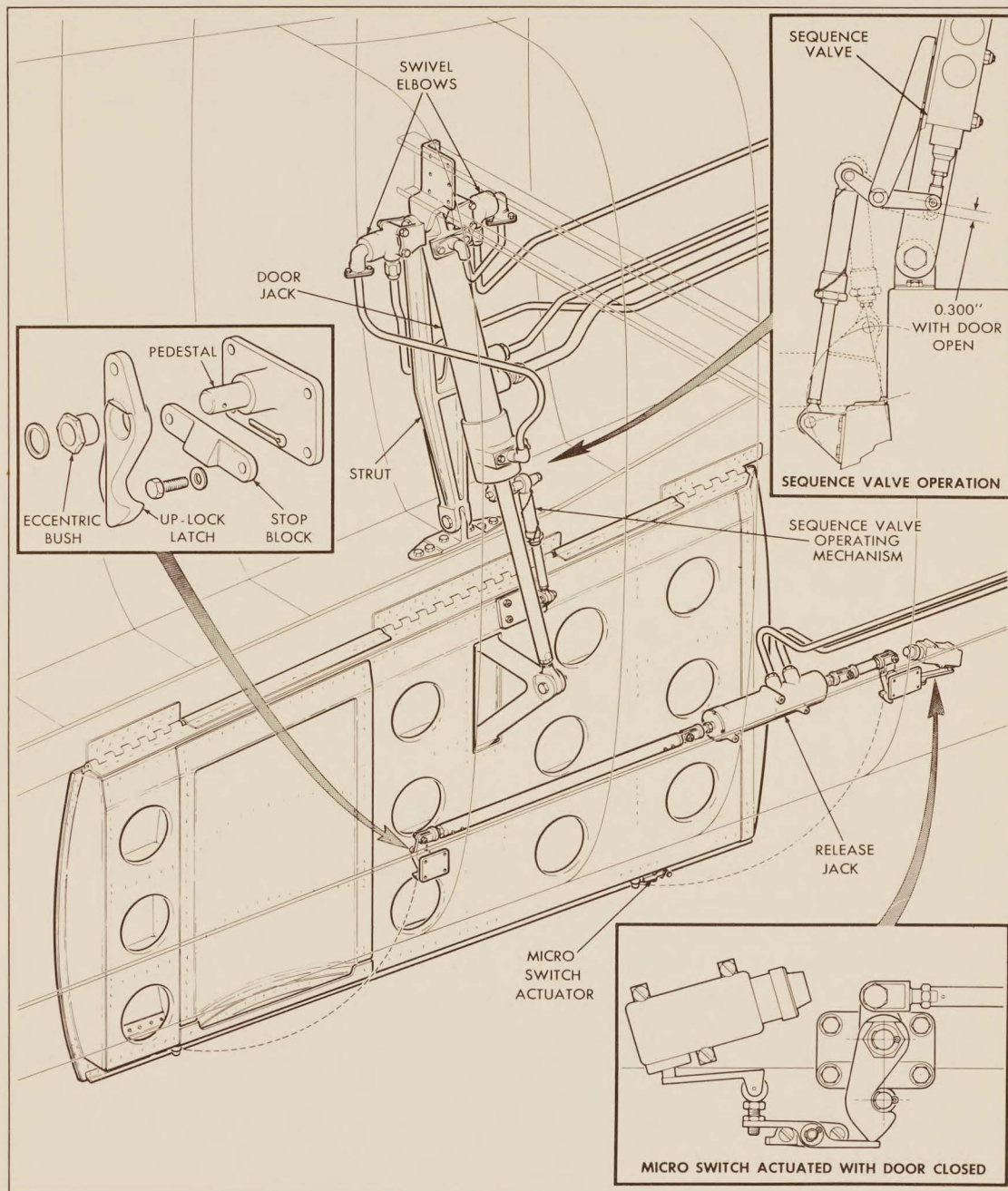


FIG. 2 NOSE LANDING GEAR DOOR

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SYSTEM DATA SHEET

SYSTEM	SUB-SYSTEM	AIRCRAFT EFFTY	REF. NO.
NOSE LANDING GEAR		25201	91
<p style="text-align: center;">DESCRIPTION</p> <p>General</p> <p>1. The nose landing gear is a twin wheeled unit fitted with a liquid-spring shock absorber and hydraulic steering. Retraction is forwards and upwards, and when retracted it is faired in by a leg fairing and a wheel door. A landing light and a taxiing light are attached to the nose landing gear.</p> <p>Nose Leg Assembly</p> <p>2. The nose leg assembly consists of a Y-shaped upper member, a liquid-spring shock absorber, a nose wheel steering jack, torque links, axle assembly, and a pneumatic strut. The upper member is attached to the navigator's bulkhead by two pivot pins operating in plain bearings. The retracting jack is attached to a lug on the upper member.</p> <p>Shock Absorber</p> <p>3. The liquid-spring shock absorber is mounted with the cylinder at the lower end. The cylinder is attached to the axle assembly, and the piston rod is attached to a removable sleeve mounted in the lower portion of the leg. The charging point is fitted at the rear of the lower end of the cylinder.</p> <p>Nose Wheel Steering Jack.</p> <p>4. The nose wheel steering jack is of the double acting hydraulic type and is operated by a mechanical control valve. The control valve is actuated by twin cables through a follow-up bow and pulley which return the valve to neutral after the nose wheel has assumed the degree of steering selected. The steering jack also provides shimmy damping when nose wheel steering is not selected. The jack piston rod turns the nose wheels through a bellcrank attached to the upper torque link.</p> <p>Torque Links</p> <p>5. Torque links are fitted between the nose wheel steering bellcrank and the nose wheel suspension lever to transmit motion from the nose wheel steering jack to the axle assembly. A taxiing light which turns with the wheels is attached to the lower torque link.</p> <p>Axle Assembly</p> <p>6. The axle assembly consists of a suspension lever and free axle. The axle revolves in two tapered roller bearings located in the suspension lever. End float</p>			
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of the bearings can be adjusted by a retaining nut fitted on the RH side. Involute serrations are machined on each end of the axle to locate the twin tubeless nose wheels.

Pneumatic Strut

7. A pneumatic strut fitted between the axle assembly and the leg ensures that the shock absorber is fully extended before the landing gear is retracted.

Drag Strut

8. A folding drag strut is fitted between the upper portion of the leg and the aircraft structure. The drag strut contains the nose landing gear down lock which is engaged by a spring when the landing gear is down and is disengaged hydraulically when the landing gear is selected up.

Up Lock

9. A nose leg up lock is fitted on the wheel bay central bulkhead and engages with an adjustable roller on the nose leg. The up lock is engaged by a spring when the landing gear is retracted, and is disengaged hydraulically when the nose wheel door jack extends to the first blow-back lock.

Leg Fairing

10. The leg fairing is located behind the leg. It is attached to the leg by two adjustable rods, and to the aircraft by a piano hinge.

Nose Wheel Door

11. The nose wheel door is attached to the LH side of the wheel bay by a piano hinge. The door is retracted hydraulically by a hydraulic jack equipped with a multi-stage lock to prevent blow-back. The door is locked in the up position by two locks which are locked mechanically and are released hydraulically.

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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Nose Landing Leg		REF. NO. 91-1	
AVRO PART NO. 7-4291-1		MANUFACTURER Jarry Hydraulics		MAN'FR'S PART NO. 1500		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION Nose landing gear.							
LOCATION Navigators bulkhead, station 215.							
ACCESS Accessible in the nosewheel bay.						MEN X MINUTES	
REPLACEMENT PROCEDURE Secure the landing gear in the ground handling rig. Position the leg and fit the two pivot pins. Install the drag brace and adjust the leg to rigging position. Assemble the swivel elbows and connect nosewheel steering hydraulic lines. Connect the dog leg swivel to the drag brace. Connect the nosewheel steering cables and electrical cables. Adjust and connect up the retraction jack. Connect the leg fairing. Functional test the landing gear and adjust the up-lock roller and leg fairing.						MEN X MINUTES	

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INSPECTION							MEN X MINUTES	
Check leg and attachments for security, cleanliness, damage, leaks and corrosion. Check all pivot pins and bearings for wear. Lubricate according to lubrication chart.								
FUNCTIONAL CHECKS							MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT Hydraulic ground test rig. Nose leg ground handling rig. Electrical ground power unit. B4 stand. Aircraft jacks.								
SPECIAL TOOLS TO REMOVE OR SERVICE								
REMARKS								
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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Nose Landing Gear Leg Fairing		REF. NO. 91-2	
AVRO PART NO. 7-1052-7		MANUFACTURER Avro Aircraft Ltd.		MAN'FR'S PART NO.		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE: KNOWN-							
ESTIMATED- 500 hours							
FUNCTION To enclose the landing gear when retracted.							
LOCATION Attached to the nose leg and wheel bay rear skin.							
ACCESS Unobstructed.						MEN X MINUTES	
REPLACEMENT PROCEDURE Secure fairing to the aircraft skin with a wire hinge. Adjust and connect the two attachment rods. Carry out nose leg functional test, and check fairing for flush fitting.						MEN X MINUTES	

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INSPECTION		MEN X MINUTES	
<p>Check for damage, distortion and loose rivets. Check hinge and adjustable rods for wear and security.</p>			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
<p>Hydraulic ground test rig. Aircraft jacks. Electrical ground power unit.</p>			
SPECIAL TOOLS TO REMOVE OR SERVICE			
REMARKS			
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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Drag Strut		REF. NO. 91-3	
AVRO PART NO. 7-4291-3		MANUFACTURER Jarry Hydraulics		MAN'FR'S PART NO. 1510		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION Braces the nose landing gear for fore and aft loads. Provides the nose landing gear down lock.							
LOCATION Fitted to the nose landing gear and the structure at station 177.							
ACCESS Unobstructed.						MEN X MINUTES	
REPLACEMENT PROCEDURE Assemble the drag strut to the leg and structure fittings. Connect the dog leg swivel and micro-switch to the strut. Adjust the strut to obtain the correct nose landing gear rigging position. Carry out complete functional test of the nose landing gear.						MEN X MINUTES	

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INSPECTION		MEN X MINUTES	
Check for security, damage, cracks, corrosion and leaks. Check bearings and downlock for wear.			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT Hydraulic ground test rig. Electrical power unit. B4 stand. Nose leg ground handling rig. Aircraft jacks.			
SPECIAL TOOLS TO REMOVE OR SERVICE			
REMARKS			
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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Shock Absorber		REF. NO. 91-4	
AVRO PART NO. 7-4291-2		MANUFACTURER Dowty Canada Ltd.		MAN'FR'S PART NO. XT 3007-1		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE :		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To absorb landing loads.							
LOCATION Inside the nose leg lower section.							
ACCESS Remove the suspension lever with the lower torque link and the pneumatic strut.						MEN X MINUTES	
REPLACEMENT PROCEDURE Secure the shock absorber piston rod to the inner sleeve. Locate the sleeve in the leg with the retaining pins. Fit the circlip locking the retaining pins. Connect the suspension lever to the shock absorber. Connect the torque link centre pivot. Fit the pneumatic strut and charge with compressed nitrogen. Carry out functional test.						MEN X MINUTES	

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INSPECTION		MEN X MINUTES	
Check for correct extension. Charge with Silicone Oil to Spec Dowcan 200. Lubricate according to lubrication chart.			
FUNCTIONAL CHECKS		MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT			
Aircraft jacks.			
SPECIAL TOOLS TO REMOVE OR SERVICE			
Fluid charging gun.			
REMARKS			
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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Nosewheel Assembly		REF. NO. 91-5	
AVRO PART NO. 7-4291-4		MANUFACTURER Dunlop		MAN'FR'S PART NO. AHM 50548		AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-		ESTIMATED-		500 hours	
FUNCTION To facilitate motion.							
LOCATION Nose landing gear.							
ACCESS Unobstructed.						MEN X MINUTES	
REPLACEMENT PROCEDURE Fit the wheel on the axle serrations. Assemble the wheel washer and axle nut. Tighten the nut and lock with cotter pin. Check tyre pressure. Lower wheel to the ground.						MEN X MINUTES	

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INSPECTION						MEN X MINUTES			
Check tires for condition, pressure (170 psi) and creep. Remove wheels, clean and inspect for cracks and corrosion. Lubricate according to lubrication chart.									
FUNCTIONAL CHECKS						MEN X MINUTES			
GROUND HANDLING AND GROUND TEST EQUIPMENT									
Aircraft axle jack. Compressed nitrogen bottles.									
SPECIAL TOOLS TO REMOVE OR SERVICE									
Tire pressure gauge.									
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COMPONENT DATA SHEET

SYSTEM NOSE LANDING GEAR		SUB-SYSTEM		COMPONENT Pneumatic Strut	REF. NO. 91-6
AVRO PART NO.	MANUFACTURER Jarry Hydraulics		MAN'FR'S PART NO. 1650	AIRCRAFT EFFECTIVITY 25201	
OVERHAUL LIFE:		KNOWN-	ESTIMATED-	500 hours	
FUNCTION To fully extend the shock absorber during landing gear retraction.					
LOCATION Fitted between suspension lever and nose leg.					
ACCESS Unobstructed.					MEN X MINUTES
REPLACEMENT PROCEDURE Assemble the strut to the lower leg and suspension lever. Inflate the strut with compressed nitrogen.					

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INSPECTION								MEN X MINUTES	
Check for correct pressure. Inspect for security, damage, cracks and leaks.									
FUNCTIONAL CHECKS								MEN X MINUTES	
GROUND HANDLING AND GROUND TEST EQUIPMENT									
High pressure gauge. Aircraft jacks.									
SPECIAL TOOLS TO REMOVE OR SERVICE									
REMARKS									
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