

TECHNICAL MANUAL**RECEIVED**

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JOB GUIDE**SERVICING - AIRCRAFT CLEANING****USAF SERIES
F-15C AND F-15D
AIRCRAFT**

McDonnell Douglas Corporation

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F33657-01-D-0026

Basic and all changes have been merged to make this a complete publication

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INTRODUCTION

PURPOSE.

This manual provides step-by-step maintenance information for the F-15C and F-15D aircraft washing and cleaning.

SCOPE.

The procedures in this manual are in a function/task arrangement with the number of each step shown on the illustration to locate the applicable hardware. Normally, illustrations and text are on facing pages; except in operational checkout procedures where a foldout illustration may follow several pages of text.

APPLICABILITY NOTATIONS.

Information and instructions contained in this manual unique to one model are identified as F-15C or F-15D. Data applicable to specific aircraft within a series are identified by USAF serial numbers.

ILLUSTRATIONS.

Illustrations show equipment location for each task. Task step numbers and illustration index numbers are identical. Switches, controls, and indicators are located on illustrations, but may not be shown in the position required in text.

INPUT CONDITIONS.

The input conditions at the start of each function contain the information required to prepare the aircraft for maintenance and the recommended number of people to complete the function. The required consumable supplies, support equipment, support data, special tools, and safety precautions are also provided.

FUNCTION/TASK ARRANGEMENT.

A function is made up of a task or series of tasks and illustrations which support a system or component. A function supporting a component gives all tasks required to support that component. Typical tasks are removal, installation, adjustment, rigging, operational checkout, cleaning, and so forth. All steps within a task must be done to complete the task. All tasks within a function must be done to complete the function.

Following the procedures in this technical manual is mandatory. However, when doing Red Ball maintenance, only those steps required to complete the task must be done per approved local procedures. Technicians must be sure the intent of the task has been satisfied.

FOLLOW-ON MAINTENANCE.

All steps listed under follow-on maintenance must be done when the tasks required for a given function have been completed.

IMPROVEMENT REPORTS.

Recommendations for improvements to prescribed requirements and procedures will be submitted by AFTO Form 22, Technical Order System Publication Improvement Report, in accordance with TO 00-5-1. When completing the form, insert the applicable S/S/SN number in block 8 instead of a paragraph number. In block 10 enter the task title before the summary of deficiency. The remainder of the form shall be completed per TO 00-5-1.

GLOSSARY.

Nonstandard abbreviations and symbols are described below. All abbreviations and symbols used in the maintenance manual set are described in TO 1F-15C-2-00GV-00-1.

ECS

ENVIRONMENTAL CONTROL SYSTEM



LUBRICATE BY HAND



LUBRICATE WITH OIL CAN

LUBRICATE FLUSH FITTING
WITH GREASE GUNLUBRICATE BALL FITTING
WITH GREASE GUN

**RECORD OF APPLICABLE TIME COMPLIANCE
TECHNICAL ORDERS.**

The record of applicable time compliance technical orders is a list of all TCTO which affect the technical content (text or illustration) of this manual. Only current TCTO are listed. A TCTO is deleted from the list when any of the below occurs:

- a. The equipment configuration to which the TCTO is applicable is no longer covered in the manual.
- b. The TCTO is rescinded.
- c. The TCTO is superseded or replaced.

**Record of Applicable Time Compliance Technical
Orders**

TCTO No.	Title	TCTO Date
NONE		

**AIRCRAFT WASHING AND CLEANING,
PREPARATION, WASHING AND CLEANING AND
LUBRICATION AFTER WASHING.**

INPUT CONDITIONS.

Applicability: All

Personnel Recommended: Three

Required Conditions:

- Aircraft safe for maintenance (05-00-01)
- Landing gear forward doors open (05-00-12)
- Arresting hook lowered (32-90-03)

Support Equipment:

- Protector, augmentor (2 req)
- Protector, angle of attack transmitter (2 req)
- Protector, engine air inlet (2 req)
- Protector, pitot static probe (2 req)
- Protector, secondary heat exchanger exhaust
- Plug, secondary heat exchanger inlet (2 req)
- Cover, aft gun bay louver
- Cover, forward gun bay louver
- Trailer, compressed gas air/nitrogen
- Grease gun

Support Data:

- 12-10-02
- TO 1-1-691

TO 1F-15C-2-12JG-20-1

Supplies (Consumables):

NOMENCLATURE	PART NUMBER (CAGE)	QTY
■ Barrier, material	MIL-B-131, CLASS 1 (81349)	AR
■ Grease, aircraft	MIL-G-81322 (81349)	AR
■ Lubricating oil, general purpose	VV-L-800 (81348)	AR
Nitrogen, technical	BB-N-411 TYPE 1 CLASS 1 GRADE A (81348)	AR
or		
Nitrogen, technical (Alternate)	BB-N-411 TYPE 1 CLASS 1 GRADE B (81348)	AR
■ Plastic sheet	LP378TY4CLIGRB FNSH1-0-0030X 50X96 (81348)	AR
■ Tape, pressure sensitive	MIL-T-21595 TYPE 1 (81349)	AR
■ Tape, pressure sensitive adhesive	A-A-883, TYPE 1, 1/2 IN (58536)	AR
or		
■ Tape, pressure sensitive	PPP-T-42TY1-1 (81348)	AR

12-20-01

1-2 Change 17

Personal Safety Equipment:

- Face shield or goggles
- Gloves, protective
- Rain suit (or equivalent)
- Water resistant boots
- Safety harness

Safety Conditions:

WARNING

To prevent injury to personnel, remain clear of MLG forward doors, unless forward doors are open and MLG ground safety pin is installed.

Avoid any skin contact with aircraft grease. Wash hands thoroughly before eating, drinking or smoking. Do not apply to hot surfaces; toxic gases may be released.

Nitrogen is harmful if inhaled. Do not breathe gas. Keep container closed. Use with adequate ventilation.

To prevent injury to personnel, eye protection will be worn when servicing with nitrogen or air.

Lubricating oil may cause eye and skin irritation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

PREPARATION.

NOTE

Be sure canopy is closed and locked.

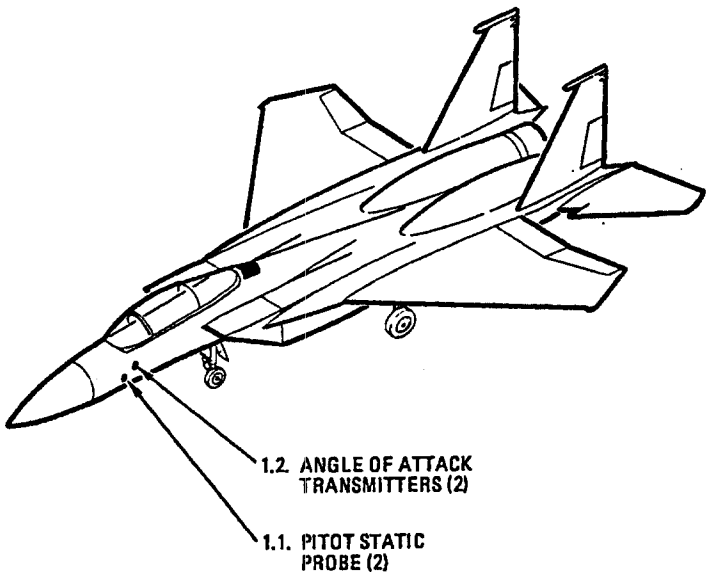
Be sure all doors, covers and fairings are in position with all fasteners installed and latches secured.

Protective plugs, covers and protectors are required to prevent cleaners and water from entering aircraft.

If protective plugs, covers and protectors are not available for all areas of aircraft, use barrier paper to seal aircraft openings.

■ Pressure sensitive tape or adhesive tape may be used to secure and seal protective plugs, covers and protectors as required.

1. Install protective plugs, covers and protectors on aircraft as listed below:
 - 1.1. Pitot static probes.
 - 1.2. Angle of attack transmitters.



15C-12JG-20(01-1)

Figure 01. Sheet 1

TO 1F-15C-2-12JG-20-1

- 1.3. Forward gun bay louver.
- 1.4. Aft gun bay louver.

CAUTION

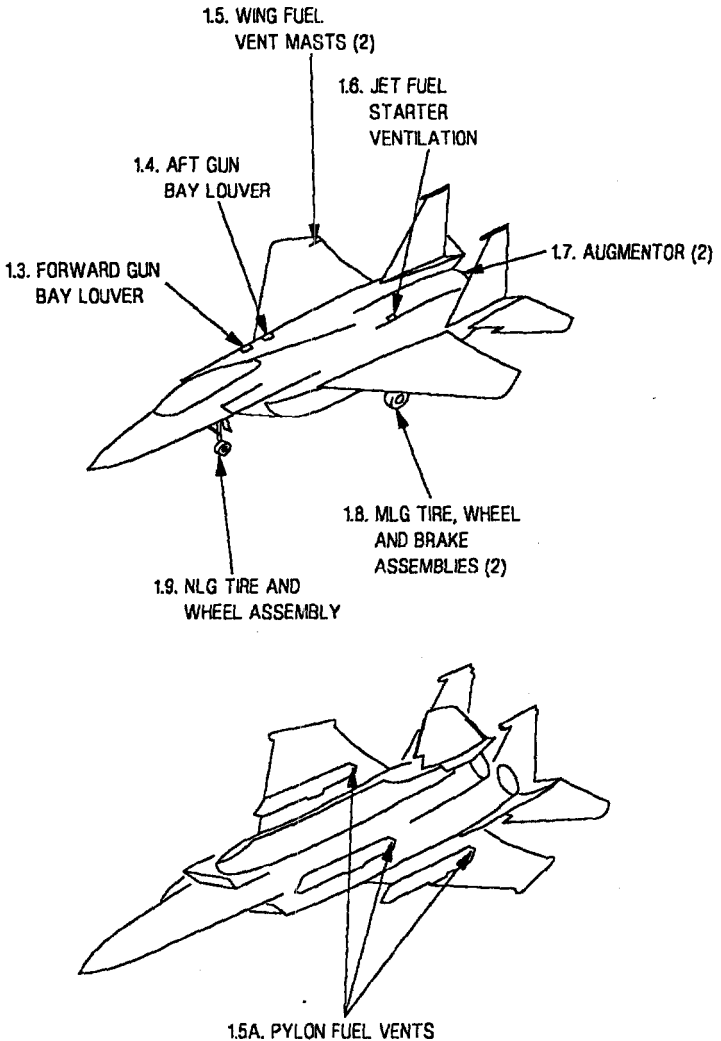
To prevent implosion or explosion of fuel systems, use vented covering, not tape.

- 1.5. Wing fuel vent masks, (temporary).
- 1.5A. If installed, pylon fuel vents, (temporary).
- 1.6. Jet fuel starter ventilation, (temporary).
- 1.7. Augmentors.

CAUTION

To prevent corrosion and/or possible failure of landing gear wheel bearings and/or brake assemblies due to contamination by water, degreasers, and oil, entire wheel and tire assembly must be covered.

- 1.8. MLG tire, wheel and brake assemblies, (temporary).
- 1.9. NLG tire and wheel assembly, (temporary).



ACJ012-01-2-17

Figure 01. Sheet 2

TO 1F-15C-2-12JG-20-1

1.10. Bulkhead opening, (temporary).

1.11. L/R keel web avionics cooling exits, (temporary).

■ 1.11A. NLG/door selector valve, (temporary).

12-20-01

1-8 Change 16

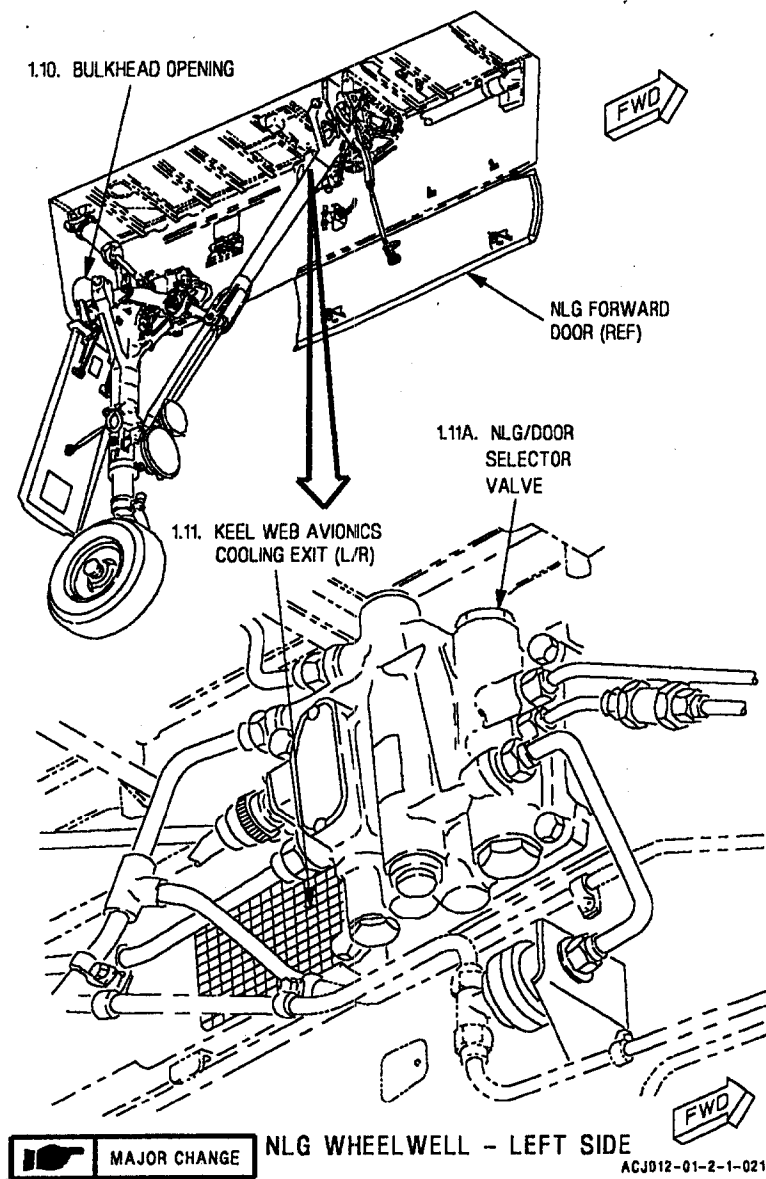


Figure 01. Sheet 2A

TO 1F-15C-2-12JG-20-1

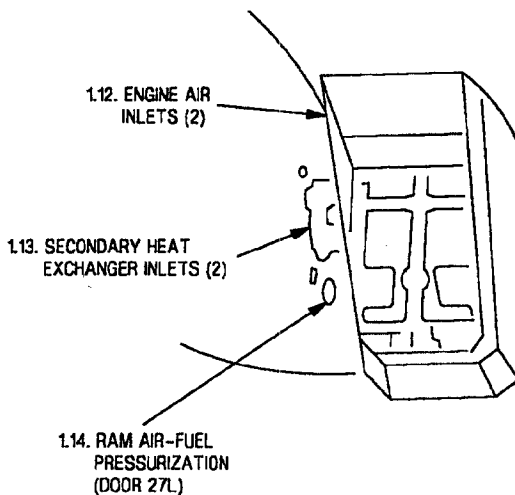
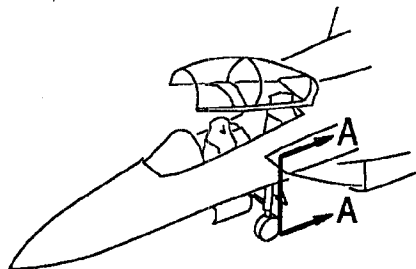
1.12. Engine air inlets.

1.13. Secondary heat exchanger inlets.

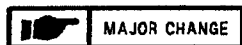
1.14. Ram air-fuel pressurization, door 27L
(temporary).

12-20-01

1-8B Change 16



VIEW A-A



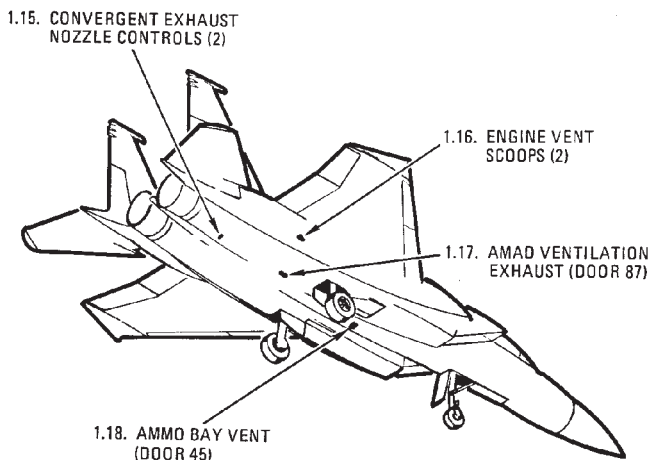
ACJD12-01-3-021

Figure 01. Sheet 3

12-20-01
Change 16 1-9

TO 1F-15C-2-12JG-20-1

- 1.15. Convergent exhaust nozzle controls, (temporary).
- 1.16. Engine vent scoops, (temporary).
- 1.17. AMAD ventilation exhaust, door 87 (temporary).
- 1.18. Ammo bay vent, door 45 (temporary).



15C-12JG-20(01-4)

Figure 01. Sheet 4

TO 1F-15C-2-12JG-20-1

- 1.19. JFS intake (temporary).
- 1.20. JFS ventilation (temporary).
- 1.21. Gas generator fuel drain (temporary).
- 1.22. JFS exhaust (temporary).
- 1.23. Augmentor fuel drains (temporary).
- 1.24. ECS bay vent, door 15 (temporary).
- 1.25. Left and right ALE-45 chaff/flare dispensers, if installed (temporary).
- 1.26. Relay panels in left and right wheelwells (temporary).
- 1.27. Regenerative heat exchanger exhaust (temporary).
- 1.28. First ramp air exit louvers and bleed air exits (temporary).
- 1.29. Forward gun port (temporary).
- 1.30. Windshield, canopy, and windshield anti-ice nozzle (temporary).

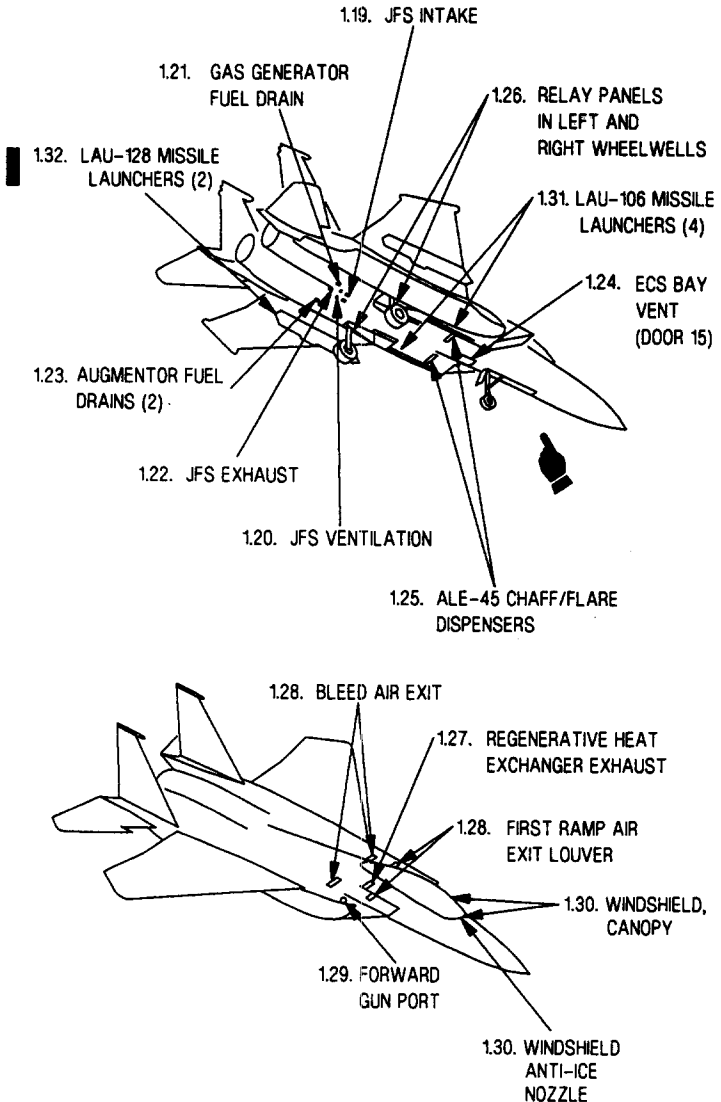


■ To prevent possible damage to AIM-9 and AIM-120 electrical connectors on LAU-106 and LAU-128 missile launchers, connectors must be sealed to prevent water intrusion.

- 1.31. LAU-106 launcher electrical connectors (temporary).
- 1.32. LAU-128 launcher electrical connectors (temporary).

12-20-01

1-12 Change 21



ACJD12-01-5-019

Figure 01. Sheet 5

WASHING AND CLEANING.

WARNING

To prevent injury to personnel due to slippery surfaces and cleaning solutions, make sure all appropriate safety equipment is worn.

NOTE

Alkaline water base cleaning is the primary method of cleaning exterior finished surfaces, unfinished titanium, gear wells, missile wells, inflight refueling compartment.

Solvent cleaning should be used only when conditions prevent the alkaline water base cleaning method from being used. Refer to TO 1-1-691.

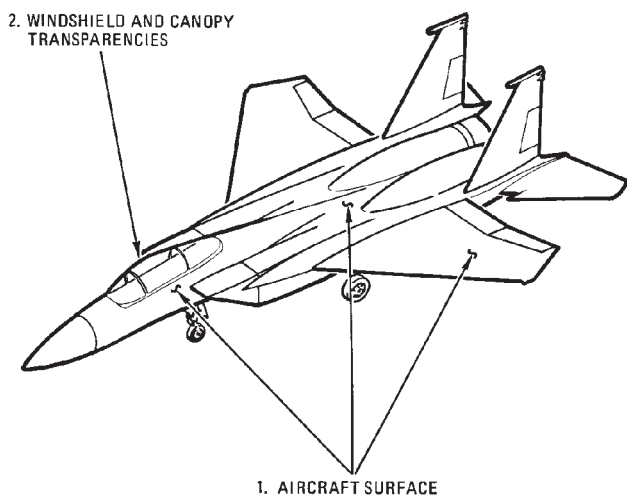
Before washing, make sure aircraft drain holes are not blocked.

1. Wash aircraft surface. Refer to TO 1-1-691.

CAUTION

Do not use alkaline cleaner or solvents to clean windshield and canopy transparencies.

2. Remove protective covers installed during preparation in step 1.30. Clean windshield and canopy transparencies (12-10-02).



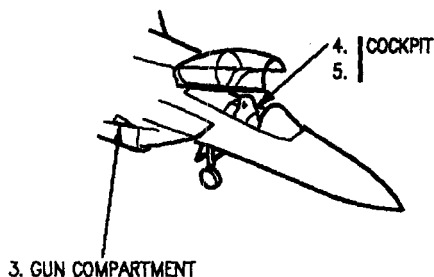
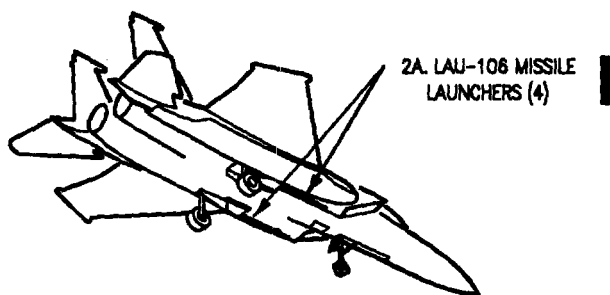
15C-12JG-20(01-6)

Figure 01. Sheet 6



■ To prevent damage to AIM-120 electrical connectors when electrical power is applied, connectors must be blown dry with low pressure dry nitrogen.

- 2A. Remove protective covers installed in step 1.31 and blow dry electrical connectors using low pressure nitrogen.
3. If required, solvent clean gun compartment. Refer to TO 1-1-691.
4. Clean oily and greasy areas of cockpit that are not near the oxygen system or canopy and windshield transparencies. Refer to TO 1-1-691.
5. Vacuum clean cockpit.
6. Remove protective plugs, covers, protectors and masking tape installed during preparation in steps 1 through 1.29.



15C-12JG-20-12(01-7)12-CAT

Figure 01. Sheet 7

TO 1F-15C-2-12JG-20-1

LUBRICATION AFTER WASHING.

Fuselage Hinged Doors.

NOTE

Make sure fittings are clean before lubrication is done.

Left side shown, right side opposite except as noted.

1. Lubricate fuselage hinged doors as listed below:

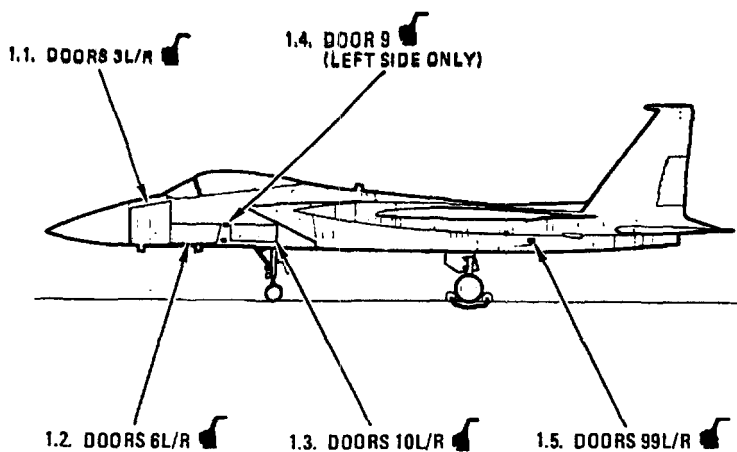
1.1. Doors 3L/R.

1.2. Doors 6L/R.

1.3. Doors 10L/R.

1.4. Door 9 (left side only).

1.5. Doors 99L/R.



15C-12JG-20(01-8)

Figure 01. Sheet 8

TO 1F-15C-2-12JG-20-1

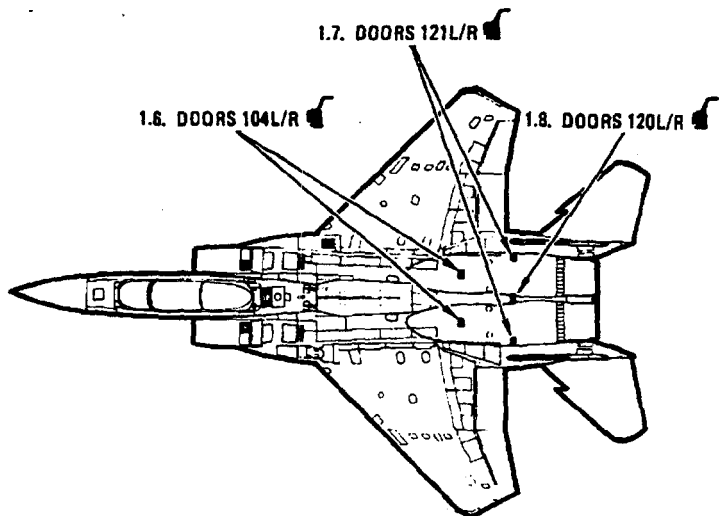
1.6. Doors 104L/R.

1.7. Doors 121L/R.

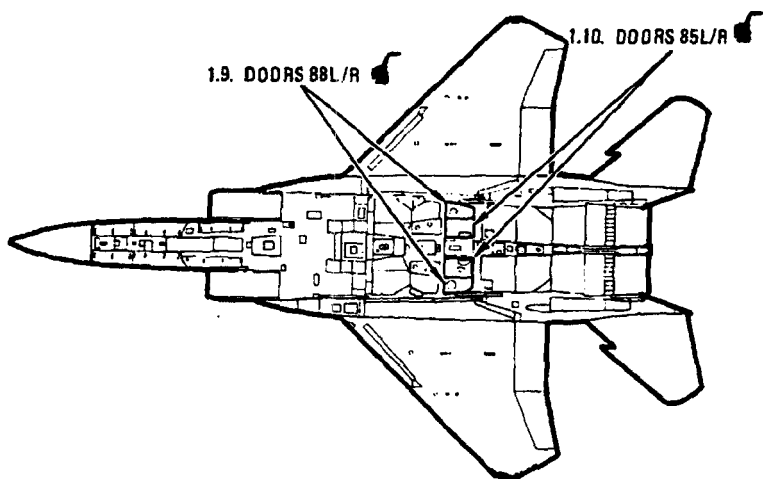
1.8. Doors 120L/R.

1.9. Doors 88L/R.

1.10. Doors 85L/R.



TOP VIEW



BOTTOM VIEW

15C-12JG-20(01-9)

Figure 01. Sheet 9

TO 1F-15C-2-12JG-20-1

Main Landing Gear and Doors.

NOTE

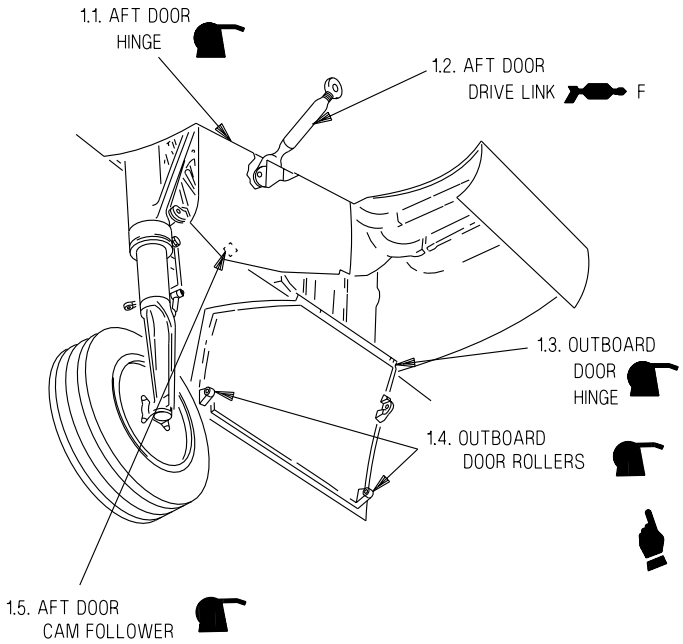
Make sure fittings are clean before lubrication is done.

1. Lubricate items listed below:

NOTE

Left MLG shown, right MLG similar.

- 1.1. Aft door hinge.
- 1.2. Aft door drive link.
- 1.3. Outboard door hinge.
- 1.4. Outboard door rollers.
- 1.5. Aft door cam follower.

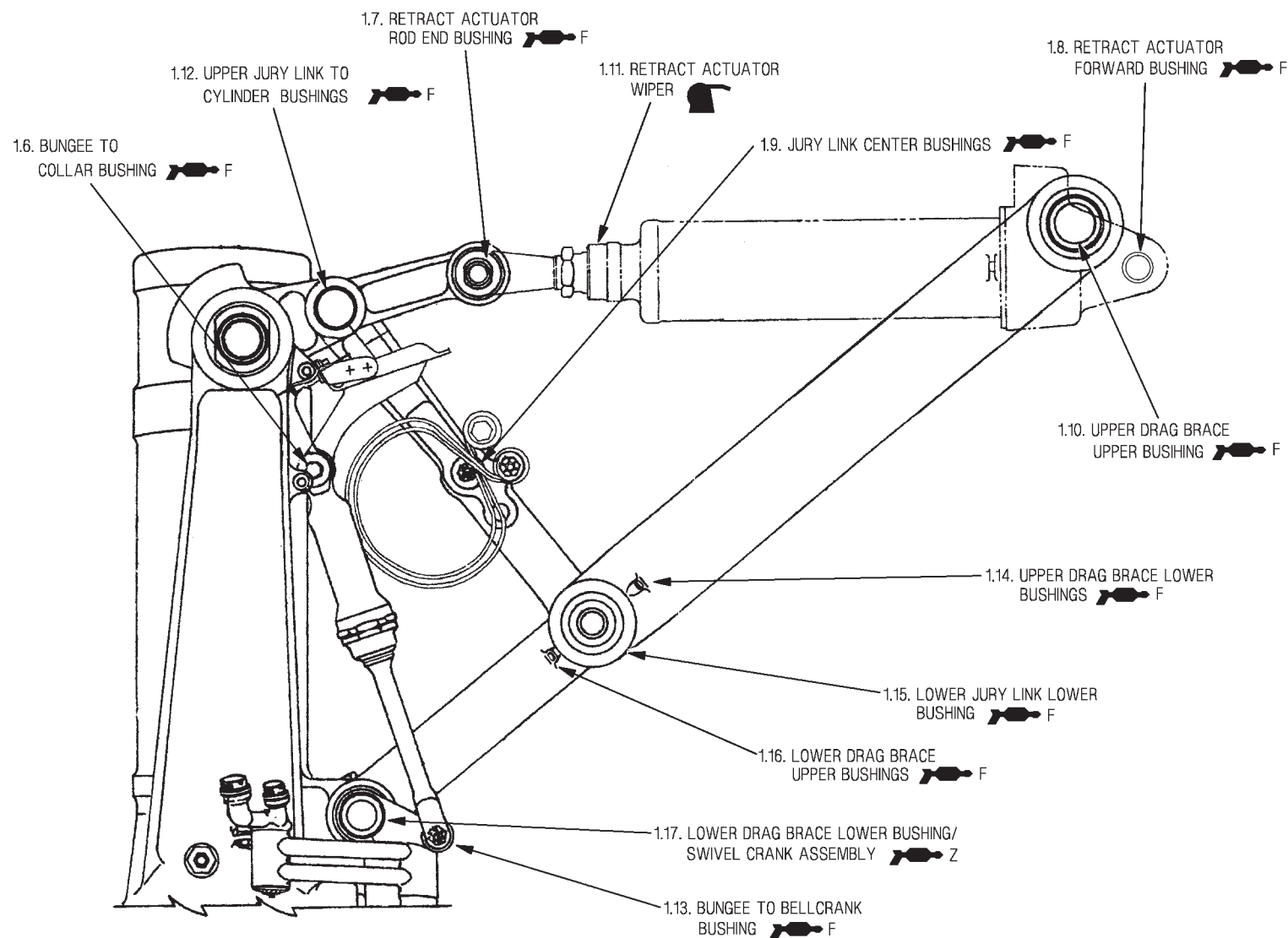


ACJD12-01-10-025

Figure 01. Sheet 10

TO 1F-15C-2-12JG-20-1

- 1.6. Bungee to collar bushing.
- 1.7. Retract actuator rod end bushing.
- 1.8. Retract actuator forward bushing.
- 1.9. Jury link center bushings.
- 1.10. Upper drag brace upper bushing.
- 1.11. Retract actuator wiper.
- 1.12. Upper jury link to cylinder bushing (2 places).
- 1.13. Bungee to bellcrank bushing.
- 1.14. Upper drag brace lower bushing (2 places).
- 1.15. Lower jury link lower bushing.
- 1.16. Lower drag brace upper bushing (2 places).
- 1.17. Lower drag brace lower bushing/swivel crank assembly.



MAJOR CHANGE

ACJD12-01-11-023

Figure 01. Sheet 11

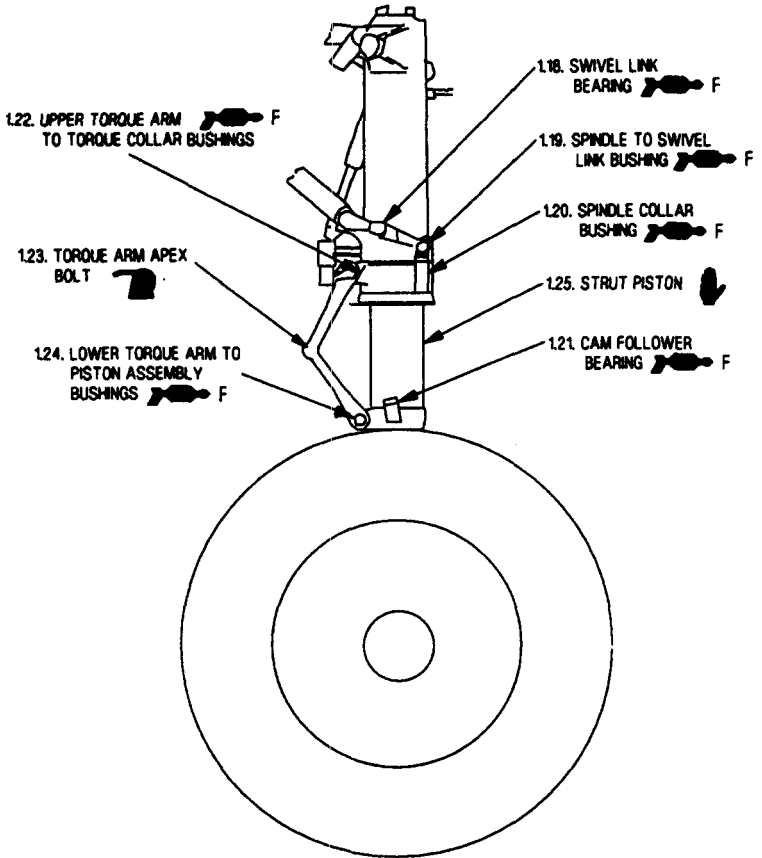
TO 1F-15C-2-12JG-20-1

- 1.18. Swivel link bearing.
- 1.19. Spindle to swivel link bushing.
- 1.20. Spindle collar bushing.

NOTE

Cam follower PN 68B411092-101 does not require lubricant (no grease fitting in slot on top of cam follower).

- 1.21. If applicable, cam follower bearing.
- 1.22. Upper torque arm to torque collar bushings (2 places).
- 1.23. Torque arm apex bolt.
- 1.24. Lower torque arm to piston assembly bushings (2 places).
- 1.25. Strut piston.



ACJD12-01-11-1-023

Figure 01. Sheet 11A

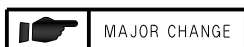
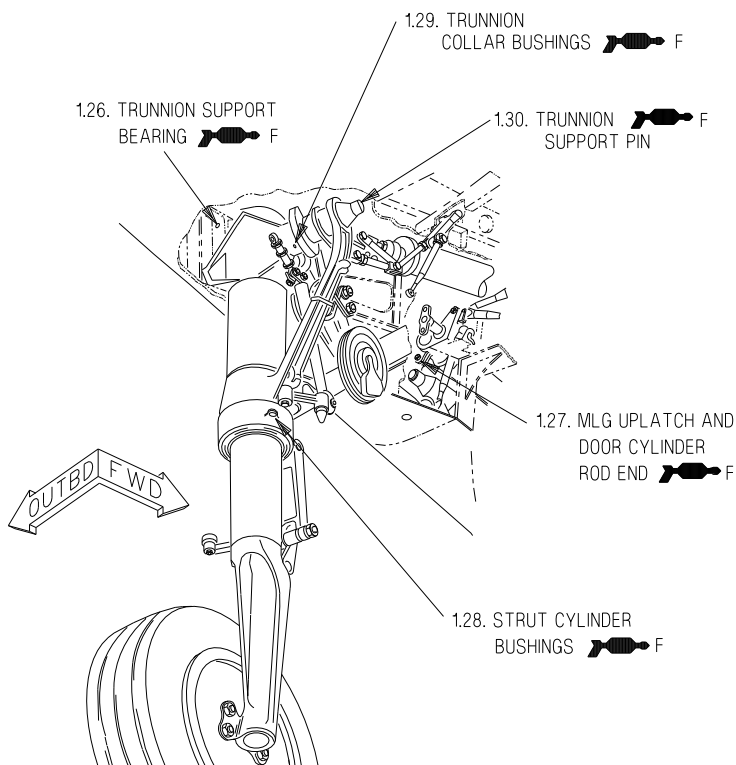
12-20-01
 Change 17 1-26A

TO 1F-15C-2-12JG-20-1

- 1.26. Trunnion support bearing.
- 1.27. MLG uplatch and door cylinder rod end.
- 1.28. Strut cylinder bushings.
- 1.29. Trunnion collar bushing (2 places).
- 1.30. Trunnion support pin.

12-20-01

1-26B Change 17



ACJD12-01-12-023

Figure 01. Sheet 12

12-20-01
Change 17 1-27

Nose Landing Gear and Doors.

NOTE

Make sure fittings are clean before lubrication is done.

Lubrication fitting may be either ball type (Z) or flush type (F).

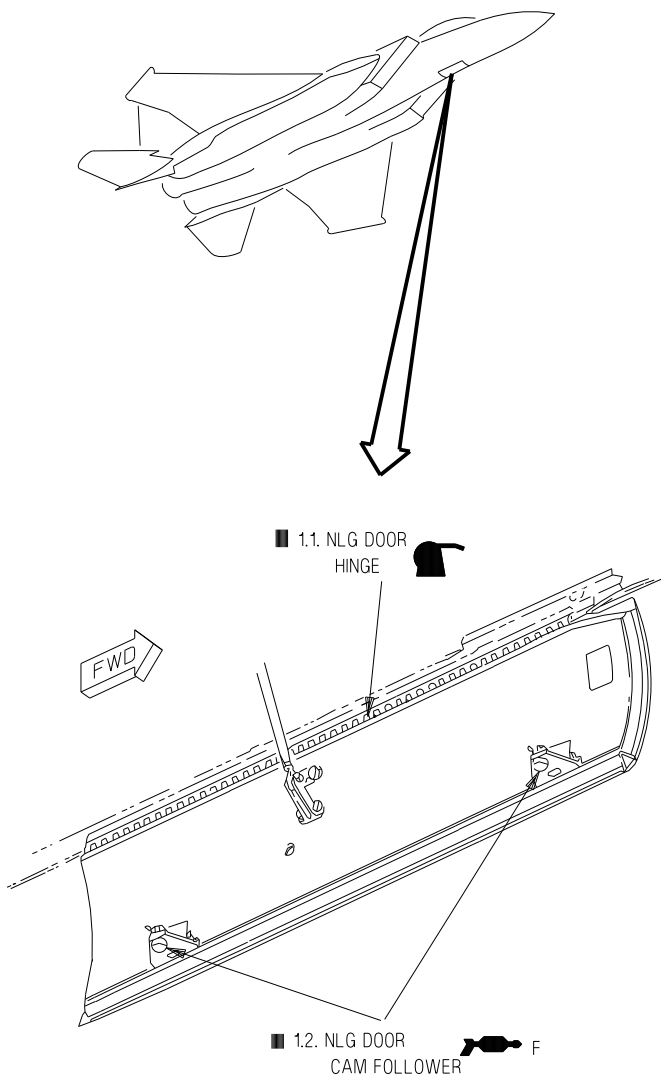
1. Lubricate items listed below:

1.1. NLG door hinge.

NOTE

Cam follower PN 68B411092-101 does not require lubricant (no grease fitting in slot on top of cam follower).

1.2. If applicable, NLG door cam follower.

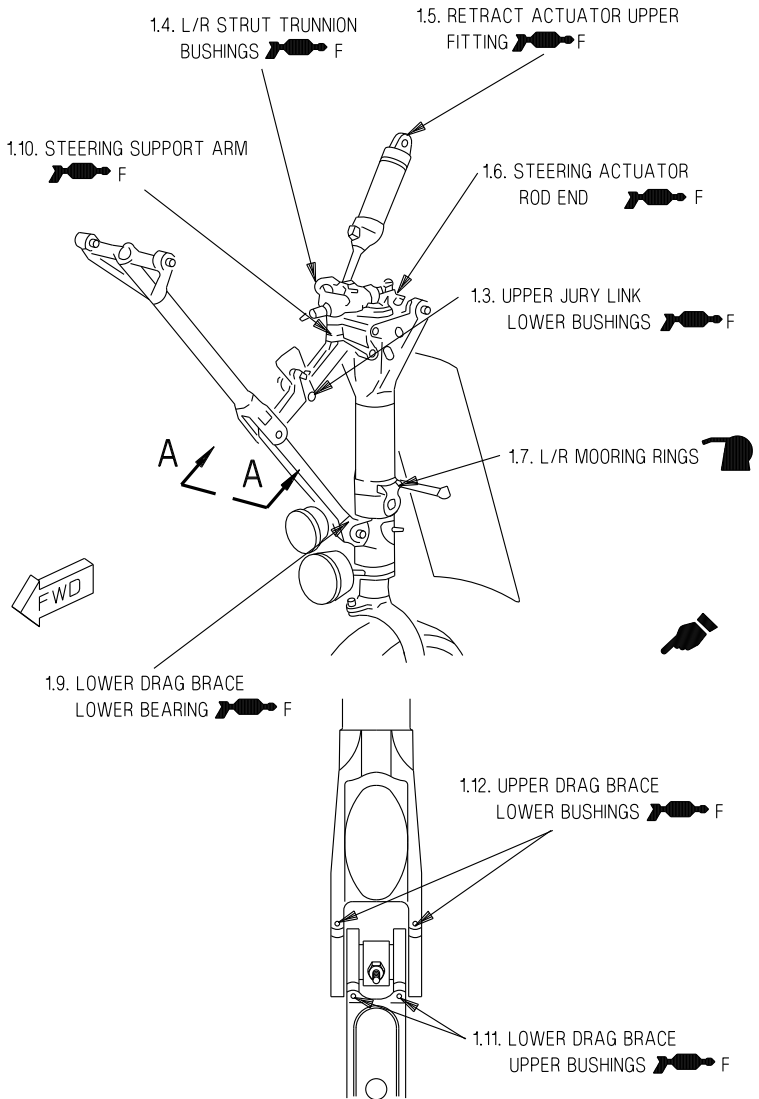


ACJD12-01-13-023

Figure 01. Sheet 13

TO 1F-15C-2-12JG-20-1

- 1.3. Upper jury link lower bushings (2 points).
- 1.4. L/R strut trunnion bushings.
- 1.5. Retract actuator upper fitting.
- 1.6. Steering actuator rod end.
- 1.7. L/R mooring rings.
- 1.8. Deleted.
- 1.9. Lower drag brace lower bearing.
- 1.10. If present, steering support arm.
- 1.11. Lower drag brace upper bushing (2 places).
- 1.12. Upper drag brace lower bushing (2 places).

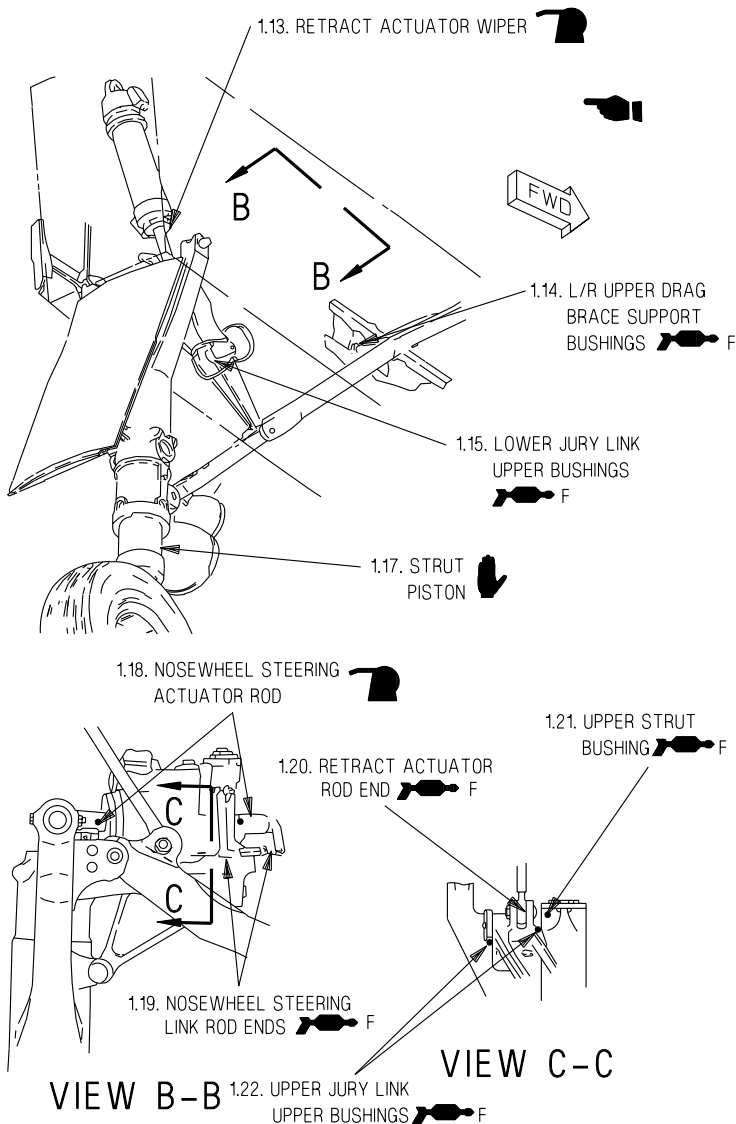


ACJD12-01-14-028

Figure 01. Sheet 14

TO 1F-15C-2-12JG-20-1

- 1.13. Retract actuator wiper.
- 1.14. L/R Drag brace support bushings.
- 1.15. Lower jury link upper bushings.
- 1.16. Deleted.
- 1.17. NLG strut piston.
- 1.18. Nosewheel steering actuator rod.
- 1.19. Nosewheel steering link rod ends (2 places).
- 1.20. NLG retract actuator rod end (2 places).
- 1.21. Upper strut bushing.
- 1.22. Upper jury link upper bushings (2 places).



ACJD12-01-15-026

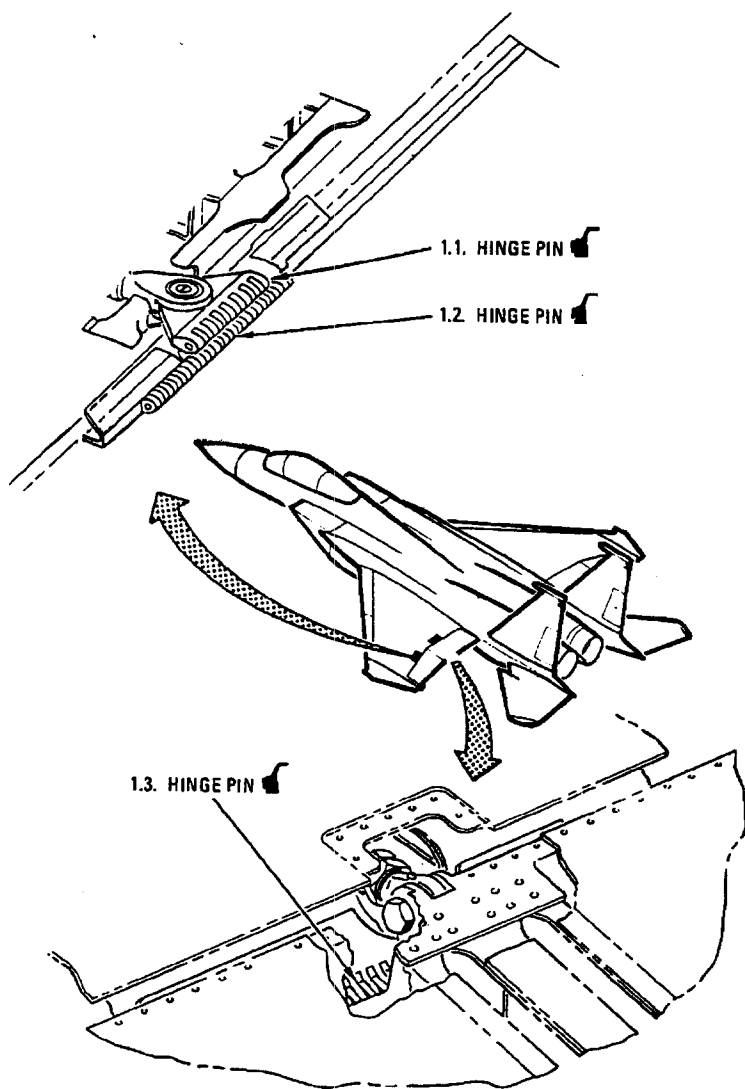
Figure 01. Sheet 15

Movable Flight Control Surfaces.

NOTE

Left side shown, right side opposite.

1. Lubricate items on aileron and flap as listed below:
 - 1.1. Hinge pin.
 - 1.2. Hinge pin.
 - 1.3. Hinge pin.



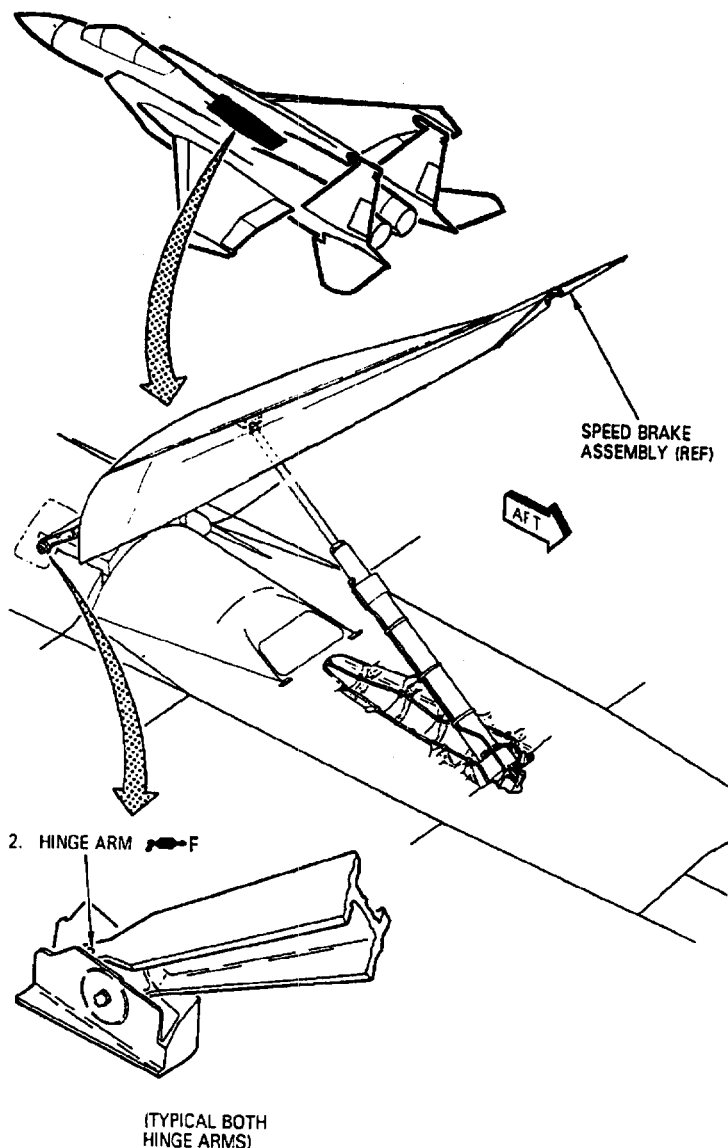
15C-12JG-20(01-16)

Figure 01. Sheet 16

NOTE

Left side shown, right side opposite.

- 2. Lubricate left and right hinge arms.



15C-12JG-20(01-17)B

Figure 01. Sheet 17

NOTE

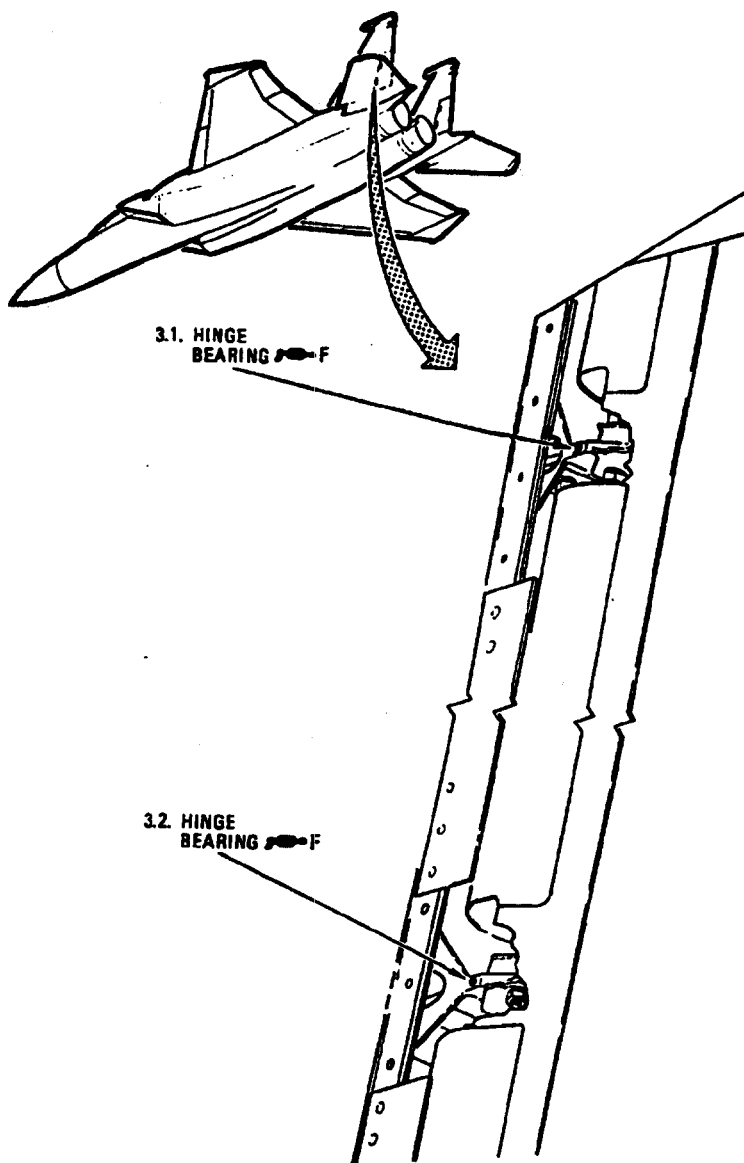
Left rudder shown, right rudder opposite.

If required, apply steady pressure to rudder surface to expose lubrication points.

3. Lubricate items on rudder as listed below:

3.1. Hinge bearing.

3.2. Hinge bearing.



15C-12JG-20(01-18)

Figure 01. Sheet 18

Arresting Hook.

1. Lubricate items listed below with lubricating oil:

- 1.1. Damper piston.
- 1.2. Bushings.
- 1.3. Bushings.
- 1.4. Bushings.
- 1.5. Rod ends.
- 1.6. Pivot arm assembly (both sides).
- 1.7. Bellcrank assembly (both sides).
- 1.8. Uplatch roller assembly.

FOLLOW-ON MAINTENANCE.

- Close landing gear forward doors (05-00-12).
- Raise arresting hook (32-90-03).

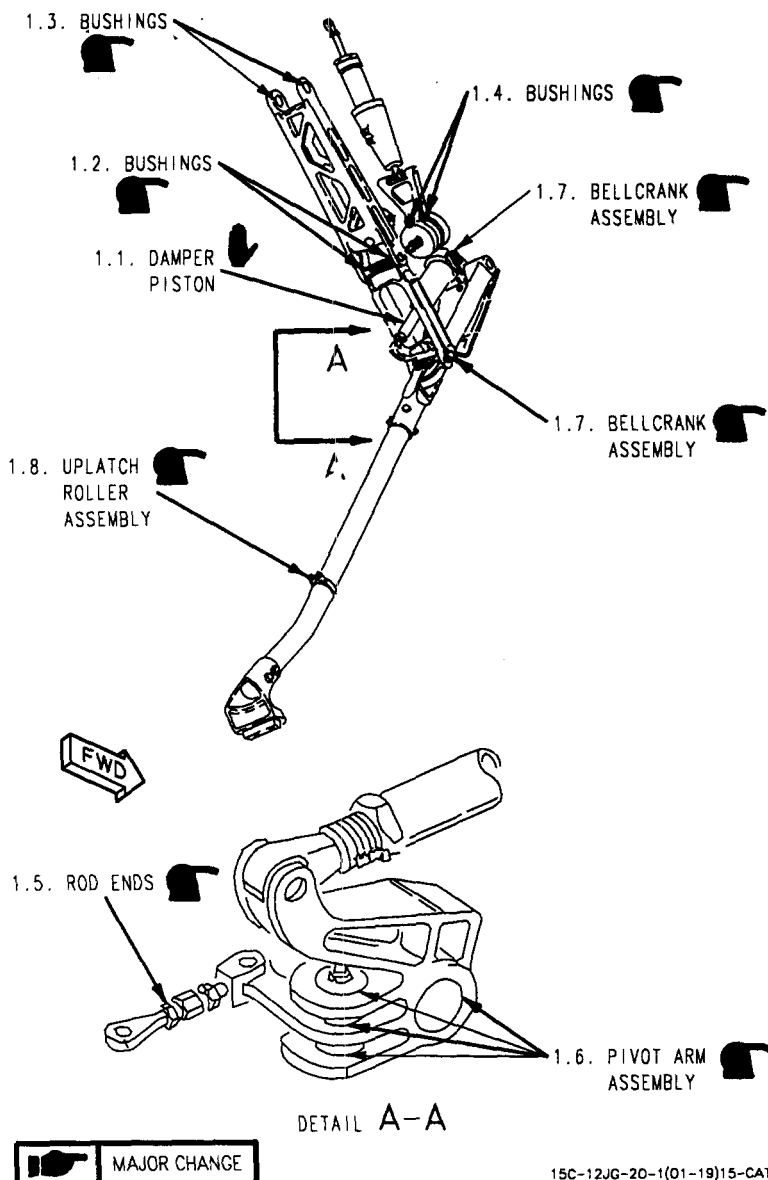


Figure 01. Sheet 19

