TO 1300i-2-27JG-80-1

TECHNICAL MANUAL

JOB GUIDE
ORGANIZATIONAL MAINTENANCE

FLIGHT CONTROLS SLATS
(27-80-00 THROUGH 27-80-02)

USAF SERIES
300i
AIRCRAFT

MCDONNELL DOUGLAS CORPORATION
MILITARY TRANSPORT AIRCRAFT
F33657-81-C-2108
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1 OCTOBER 2022

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T-2 **1 OCTOBER 2022**

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

LIST OF EFFECTIVE PAGES

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands.

Dates of issue for original and changed pages are:

Original . . . . . 0 . . . . . 1 Oct 22

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 116 CONSISTING OF THE FOLLOWING:

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TABLE OF CONTENTS

INTRODUCTION

SCOPE.

This manual contains maintenance procedures for the operational checkout and bleed of slats system components.

MODEL(S) COVERED.

All

ABBREVIATIONS.

The following is a list of non-standard abbreviations used throughout this manual:

LS	Line Select
MFD	Multifunction Display
PLCS	Places

CHANGE REQUEST.

Recommended changes to this manual shall be submitted in accordance with TO 00-5-1.300i

TO INFORMATION.

General 300i TO/eTO, TO Manager, Supplement and finalized Recommended Change (RC) information can be found in the Enhanced Technical Information Management System (ETIMS), System of Record.

LIST OF TIME COMPLIANCE TECHNICAL ORDERS (TCTO).

This list of TCTO's contains all current TCTO's that affect the technical content of text or illustrations found in this manual.

TCTO NUMBER	TITLE	TCTO DATE	APPLICABILITY

SECTION 1

GENERAL INFORMATION (27-80-00)

1-1. GENERAL INFORMATION.

1-2. This section provides general information that is essential for ensuring complete and safe maintenance procedures contained throughout this manual.

1-3. When operating auxiliary pump below 15 degrees Fahrenheit a 30 seconds on/30 seconds off duty cycle for a maximum 10 cycles may be required to reach full hydraulic pressure of 3800 to 4200 psi. Allow 10 minutes for cooling and repeat cycle.

1-4. Hydraulic system No. 2 may require 45 seconds before reaching full hydraulic pressure of 3800 to 4200 psi.

1-5. Flight control surfaces are to be cleared prior to turning off hydraulic auxiliary pumps from loadmaster control panels. Flight control surface movement may occur.

1-6. GENERAL WARNINGS, CAUTIONS, AND NOTES.

WARNING

- All flight control surfaces and thrust reversers shall be clear of personnel and equipment prior to applying or removing hydraulic power. Failure to comply may cause injury to personnel and damage to aircraft.

- All flight control surfaces and thrust reversers shall be clear of personnel and equipment prior to movement of any surfaces. Failure to comply may cause injury to personnel and damage to aircraft.

WARNING - Continued

- Warning tags shall be attached to all opened circuit breakers as directed by the technical order and an applicable warning statement shall be entered in the AFTO Form/IMT 781A, IAW TO 00-20-1, AFI 21-101 and TO 1300i-2-00GV-00-1, Chapter 5 anytime exiting cockpit circuit breaker area before task completion or there is a delay in maintenance where task cannot be fully accomplished. Failure to comply may cause injury to personnel or damage to aircraft.

CAUTION

- Air in a hydraulic system can cause numerous malfunctions, from a total system failure to a minor indication problem. If you suspect air has been inducted into a system by removing a hydraulic component or a line, refer to the hydraulic system bleed procedure, (12-29-08). Failure to comply may cause damage to aircraft.

- Slats shall be in the retracted position during Auxiliary Power Unit (APU) operations. The APU may be started with slats extended, however slats shall be set to the fully retracted position within 30 seconds of APU stabilization. When flaps are required to be extended during APU operations, Slats Disabled/Flap Operation shall be used (27-50-03, task 03-2). Failure to comply may cause damage to aircraft.

SECTION 2

SLATS SYSTEM OPERATIONAL CHECKOUT (27-80-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

01-1. Slats system operational checkout.
01-2. Preparation for slat proximity sensor operational checkout.
01-3. Slat proximity sensor operational checkout.
01-4. Follow-on maintenance for slat proximity sensor operational checkout.

Additional data:

	Task
TO 1300i-2-12JG-29-1	01-1, 01-2
TO 1300i-2-27FI-00-1	01-1, 01-3
TO 1300i-2-27JG-50-1	01-2
TO 1300i-2-29FI-00-1	01-1, 01-2, 01-4
TO 1300i-2-31FI-00-1	01-1
TO 1300i-2-31JG-60-1	01-1
TO 1300i-2-34JG-60-1	01-2, 01-4

Personnel recommended:

	Task
One	All

Safety conditions:

	Task
NA	--

Support equipment:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

Supplies:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

01-1. SLATS SYSTEM OPERATIONAL CHECKOUT.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

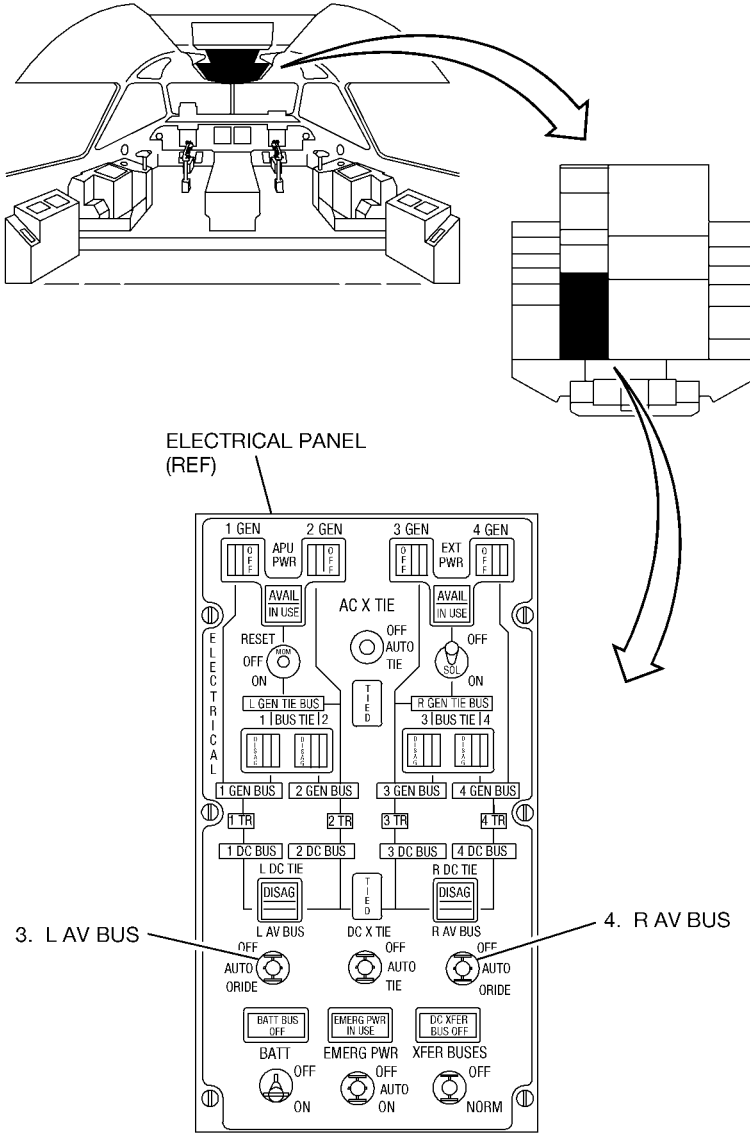
2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

3. Set **L AV BUS** switch on **ELECTRICAL** panel to **ORIDE** then to **AUTO**.

4. Set **R AV BUS** switch to **ORIDE** then to **AUTO**.

5. Operate multifunction displays system and select **CFG** format (31-61-02, task 02-1 or 02-2).

6. Observe hydraulic systems 2 and 3 reservoir sight gauge for fluid quantity (12-29-00, para 1-9).



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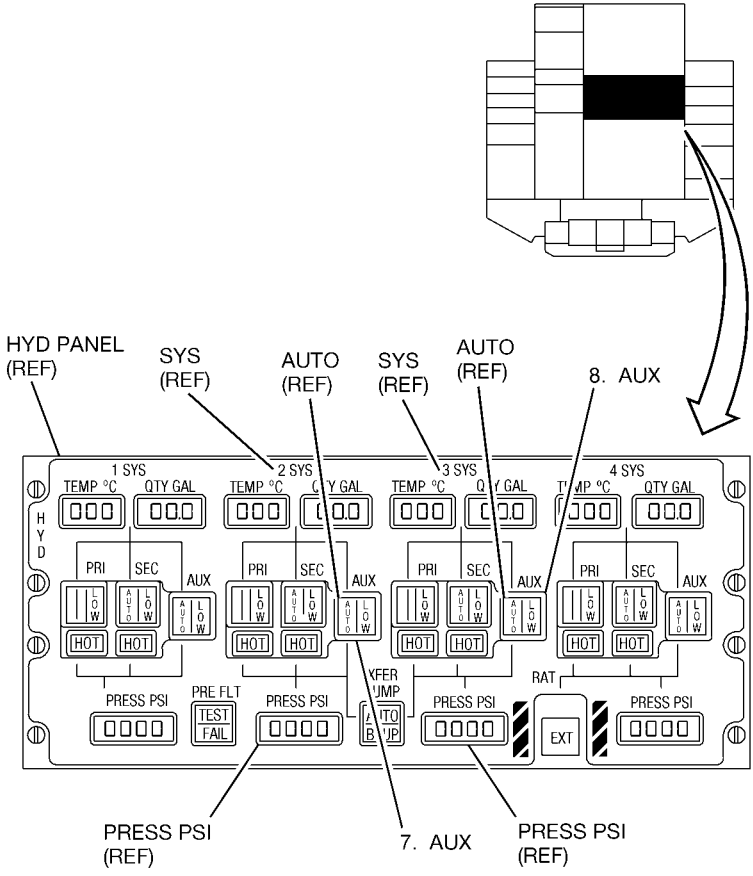
7. Press **2 SYS**, **AUX** switchlight on **HYD** panel.
    - **AUTO** light comes on (29-30-AD-_).
    - **PRESS PSI** indicator reads 3800-4200 (29-21-AB-_).
8. Press **3 SYS**, **AUX** switchlight.
    - **AUTO** light comes on (29-30-AD-_).
    - **PRESS PSI** indicator reads 3800-4200 (29-21-AB-_).



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9. Ensure **SLAT DISABLE**, **DSBL** switchlight on center control console pedestal flap/slat module is off.

10. Press **SLAT DISABLE**, **DSBL** switchlight.

    - **DSBL** switchlight comes on (27-80-AA-00).

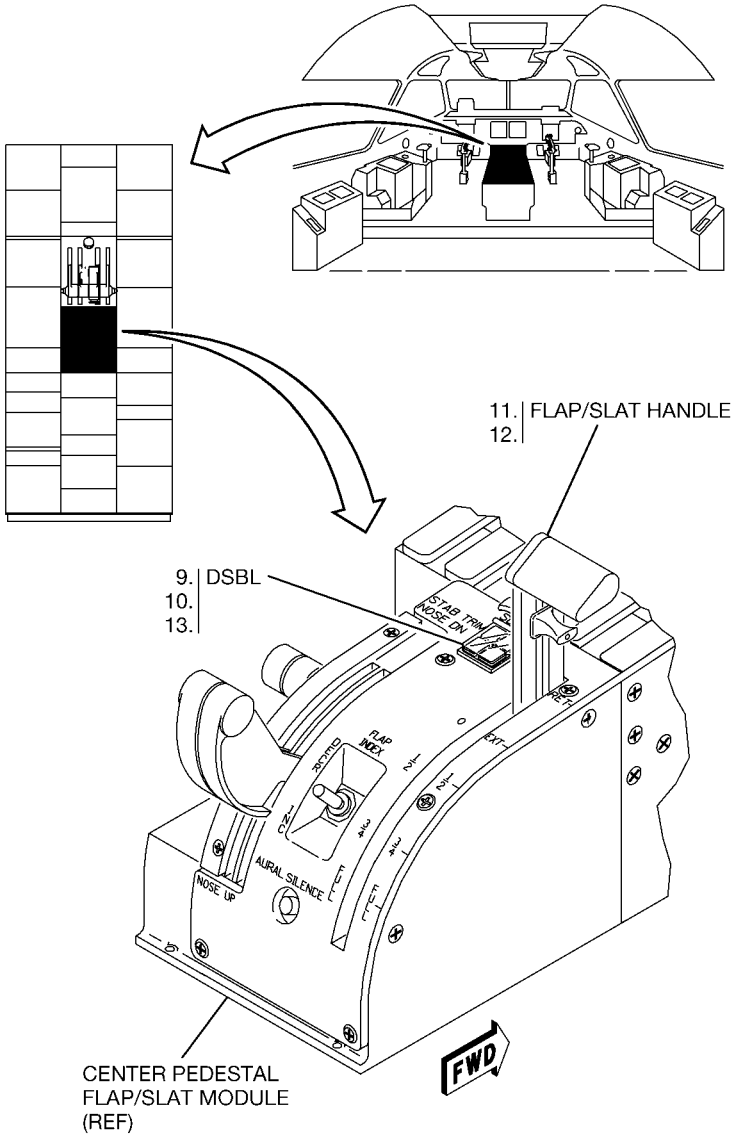
11. Set flap/slat handle on center pedestal flap/slat module to **0/EXT**.

    - No slat movement (27-80-AA-00).

12. Set flap/slat handle to **UP/RET**.

13. Press **SLAT DISABLE**, **DSBL** switchlight.

    - **DSBL** switchlight goes off (27-80-AA-00).



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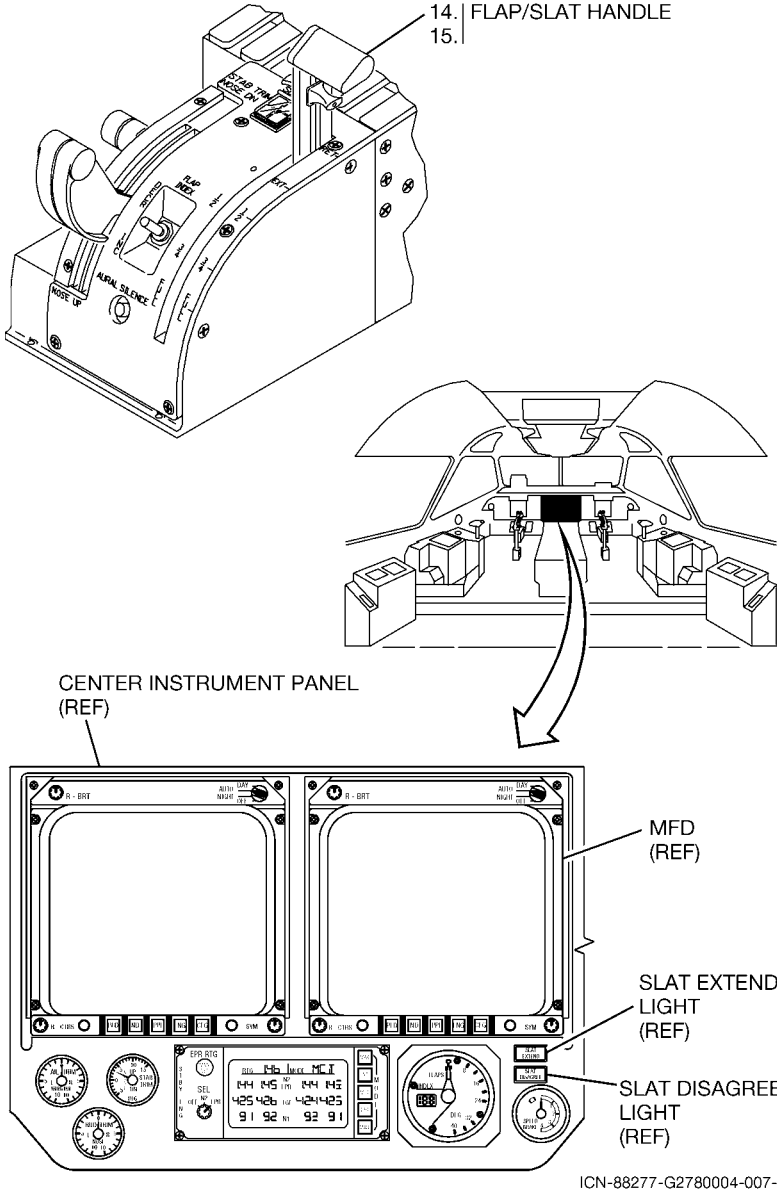
14. Set flap/slat handle to **0/EXT**.

    - **SLAT DISAGREE** light on center instrument panel comes on momentarily (27-84-AC-00).
    - **SLAT EXTEND** light comes on (27-84-AA-00).
    - Slats extend in 6 to 10 seconds.
    - Slats show in extended position on Multifunction Display (MFD) (31-61-AA-01, 31-61-AA-02, 31-61-AA-03, 31-61-AA-04).

15. Set flap/slat handle to **UP/RET**.

    - **SLAT EXTEND** light goes off (27-84-AB-00).
    - **SLAT DISAGREE** light comes on and goes off when slats are retracted (27-84-AD-00).
    - Slats retract within 8 to 13 seconds.
    - Slats shown in retracted position on MFD (31-61-AA-01, 31-61-AA-02, 31-61-AA-03, 31-61-AA-04).



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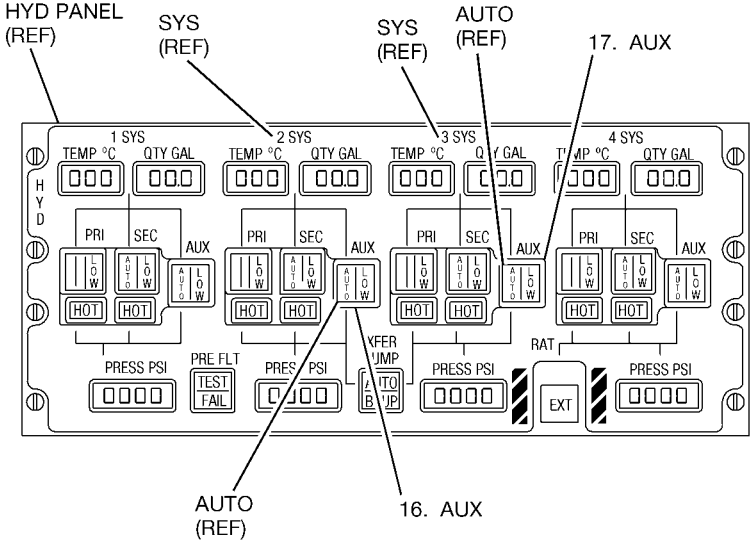
16. Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off (29-30-AD-_).

17. Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light goes off (29-30-AD-_).

18. Shutdown multifunction displays system (31-61-02, task 02-3 or 02-4).



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01-2. PREPARATION FOR SLAT PROXIMITY SENSOR OPERATIONAL CHECKOUT.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

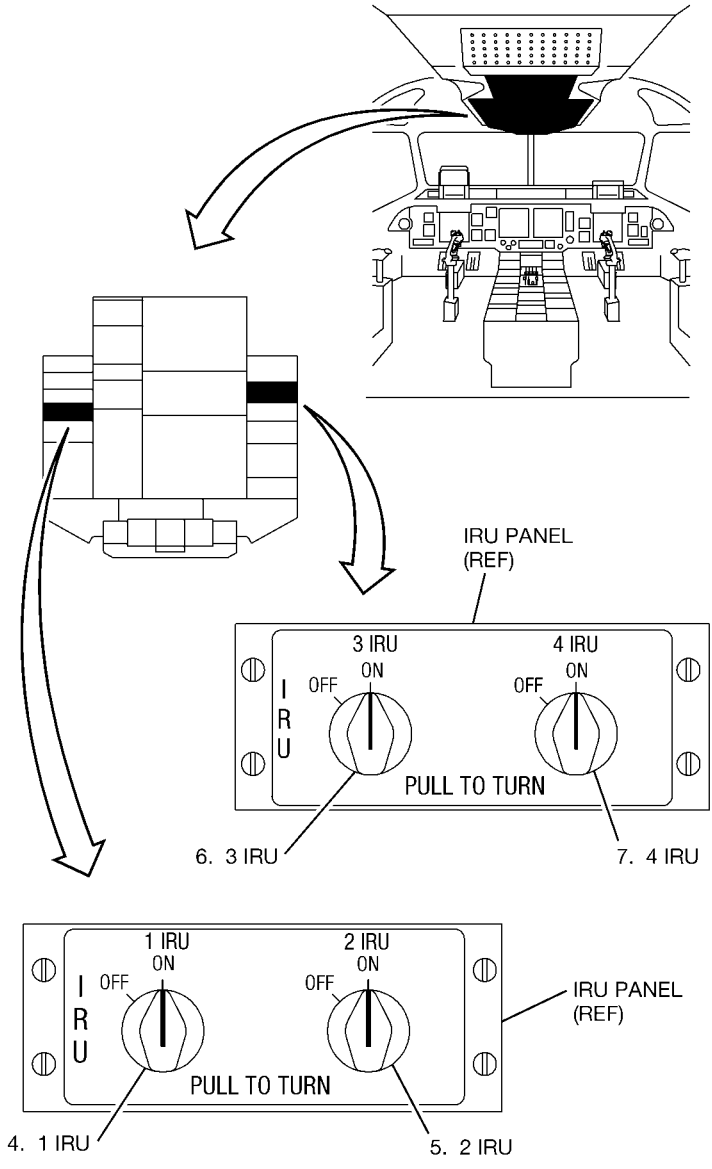
3. Operate mission computing system (34-62-02, tasks 02-1 and 02-2).

4. Set **1 IRU** switch on **IRU** panel to **ON**.

5. Set **2 IRU** switch to **ON**.

6. Set **3 IRU** switch on **IRU** panel to **ON**.

7. Set **4 IRU** switch to **ON**.



ICN-88277-G2780008-003-01

8. Observe hydraulic system reservoir sight gauge for fluid quantity (12-29-00, para 1-9).

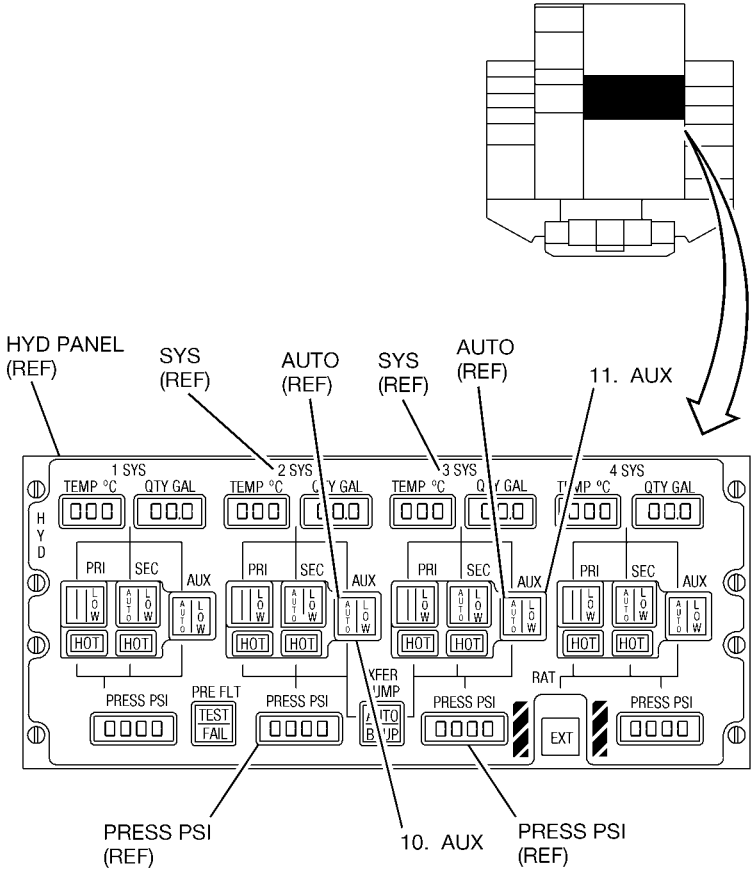
9. Operate flaps system (27-50-03, task 03-1); set flap/slat handle to **UP/RET**.

10. Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on (29-30-AD-_).
    - **PRESS PSI** indicator reads 3800-4200 (29-21-AB-_).

11. Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light comes on (29-30-AD-_).
    - **PRESS PSI** indicator reads 3800-4200 (29-12-AB-_).



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12. Set **PITCH** switch on **FCS ACTR** panel to **EFCS**.

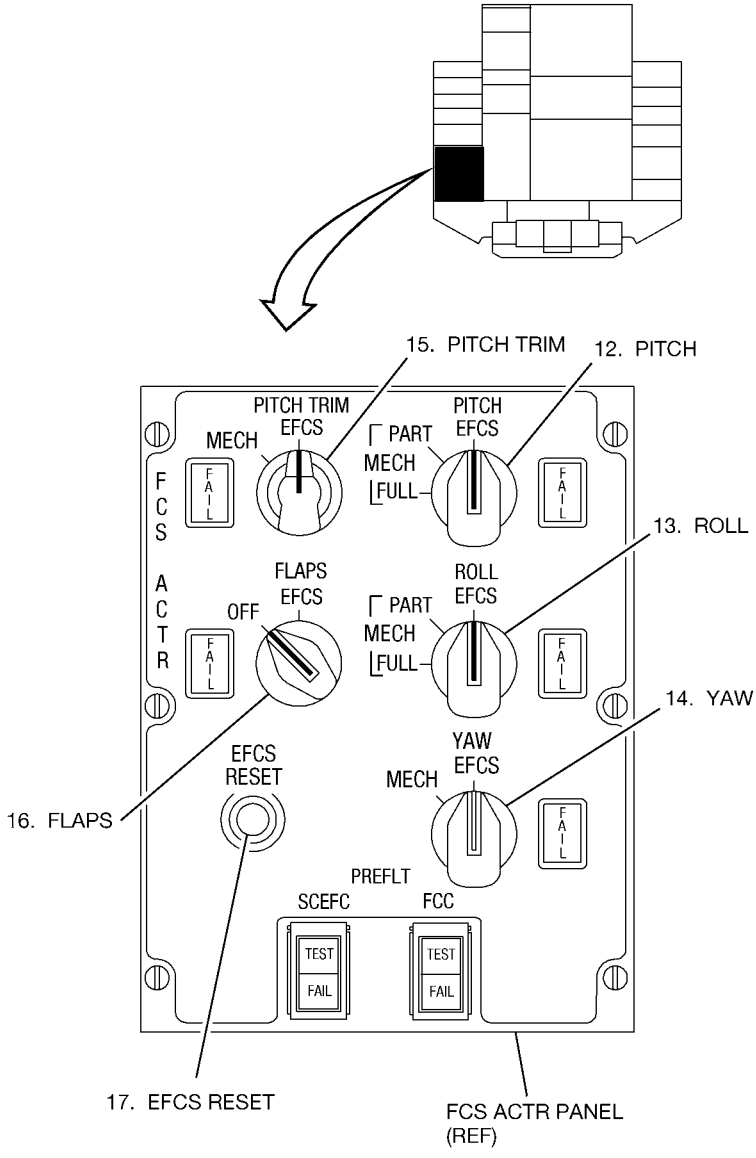
13. Set **ROLL** switch to **EFCS**.

14. Set **YAW** switch to **EFCS**.

15. Set **PITCH TRIM** switch to **EFCS**.

16. Set **FLAPS** switch to **EFCS**.

17. Press **EFCS RESET** button.



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18. Press up arrow key on **MCD** (**DU**).

    - **MSN INDEX 2** is displayed.

19. Press 6L Line Select (LS) key.

    - **MAINTENANCE MENU** is displayed.

20. Press 2L LS key.

    - **EFCS MAINT MENU** is displayed.

NOTE

A fault list and history of each line replaceable unit can be accessed from **EFCS MAINT MENU** page by pressing 1L or 2L LS key.

21. Press 3L LS key.

    - **EFCS MAINTENANCE BIT** is displayed.

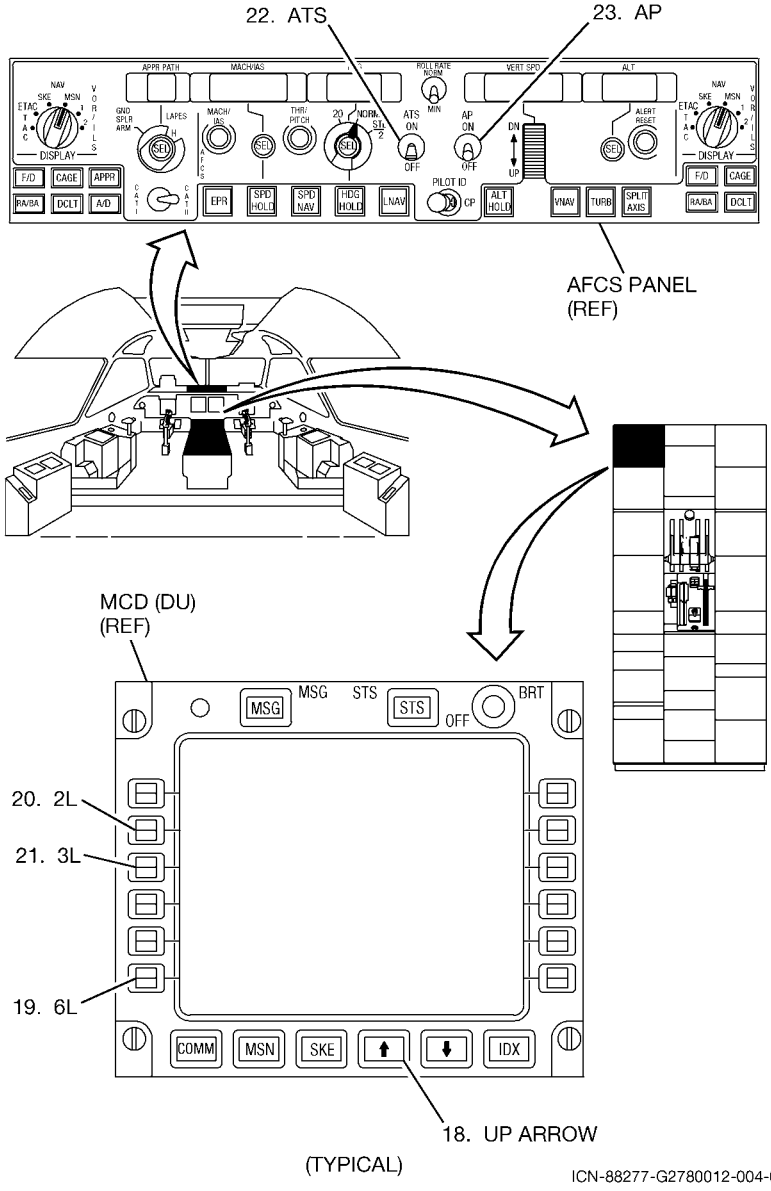
NOTE

ATS and **AP** switches must be set simultaneously to access **EFCS MAINTENANCE BIT** menu.

22. Set **ATS** switch on **AFCS** panel to **ON**.

23. Set **AP** switch to **ON**.

    - **EFCS MAINTENANCE BIT ENTRY IN PROGRESS** is displayed on **MCD** (**DU**).



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01-3. SLAT PROXIMITY SENSOR OPERATIONAL CHECKOUT.

1. Press up arrow key twice on **MCD** (**DU**).

   - **EFCS MAINTENANCE BIT** page **3/5** is displayed.

2. Press 4R Line Select (LS) key.

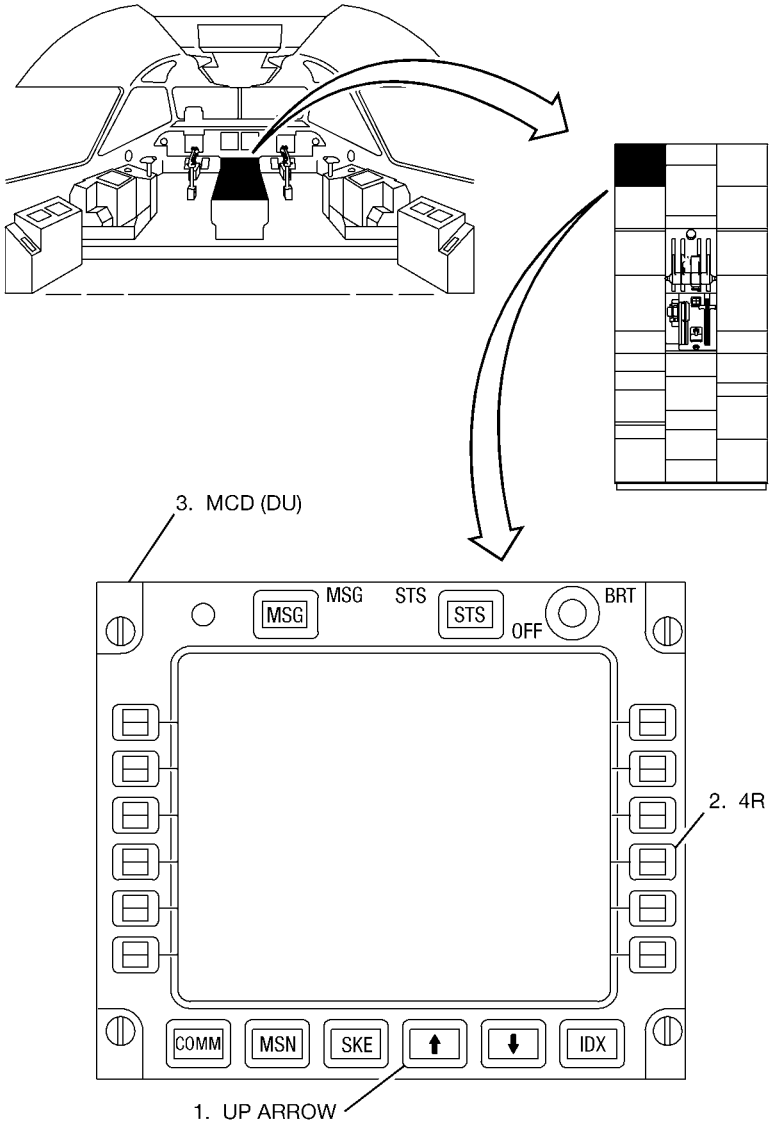
   - **MOVE FLAP/SLAT HANDLE TO EXTEND** is displayed.

NOTE

- Allow slats to fully retract or extend before pressing line select key for **CONT** or **MCD**. Failure to comply may cause the test to fail.
- Test may be aborted at any time by pressing 6R LS key.
- Refer to TO 1300i-2-27FI-00-1 to correct any failure condition.

3. Follow instructions on **MCD** (**DU**).

   - **TEST PASSED** is displayed.



ICN-88277-G2780013-004-01

4. Press 6R LS key.

   - **EFCS MAINTENANCE BIT** page **3/5** is displayed.

5. Press 6R LS key.

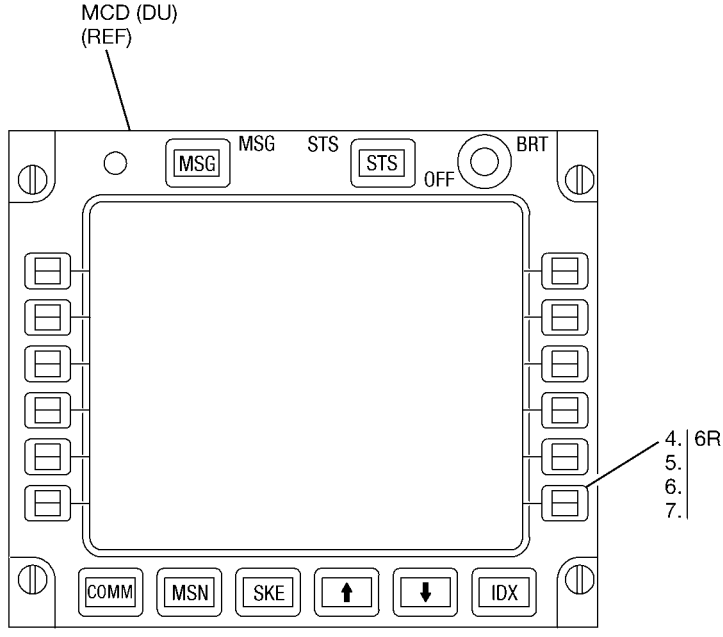
   - **EFCS MAINT MENU** is displayed.

6. Press 6R LS key.

   - **MAINTENANCE MENU** is displayed.

7. Press 6R LS key.

   - **MSN INDEX 2** is displayed.



(TYPICAL)

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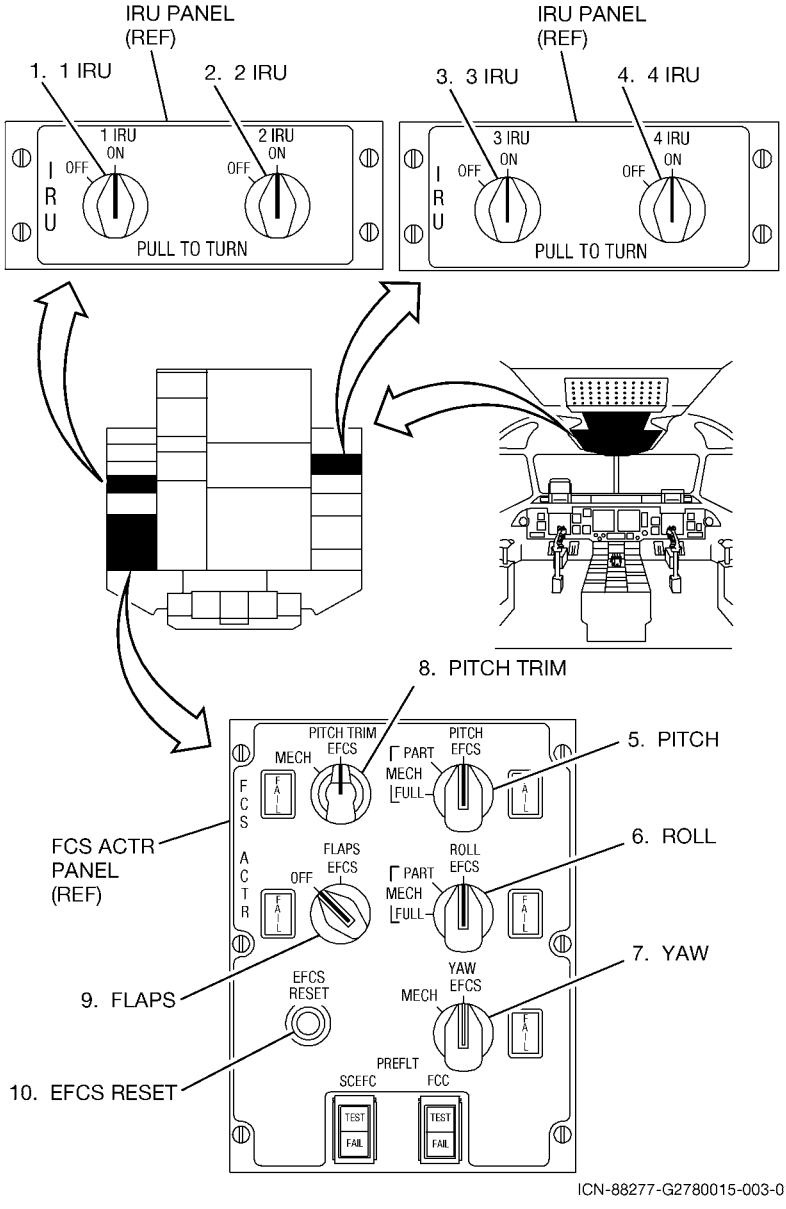
01-4. FOLLOW-ON MAINTENANCE FOR SLAT PROXIMITY SENSOR OPERATIONAL CHECKOUT.

1. Set **1 IRU** switch on **IRU** panel to **OFF**.
2. Set **2 IRU** switch to **OFF**.
3. Set **3 IRU** switch on **IRU** panel to **OFF**.
4. Set **4 IRU** switch to **OFF**.
5. Set **PITCH** switch on **FCS ACTR** panel to **FULL MECH**.
6. Set **ROLL** switch to **FULL MECH**.
7. Set **YAW** switch to **MECH**.
8. Set **PITCH TRIM** switch to **MECH**.
9. Set **FLAPS** switch to **OFF**.
10. Press **EFCS RESET** button.



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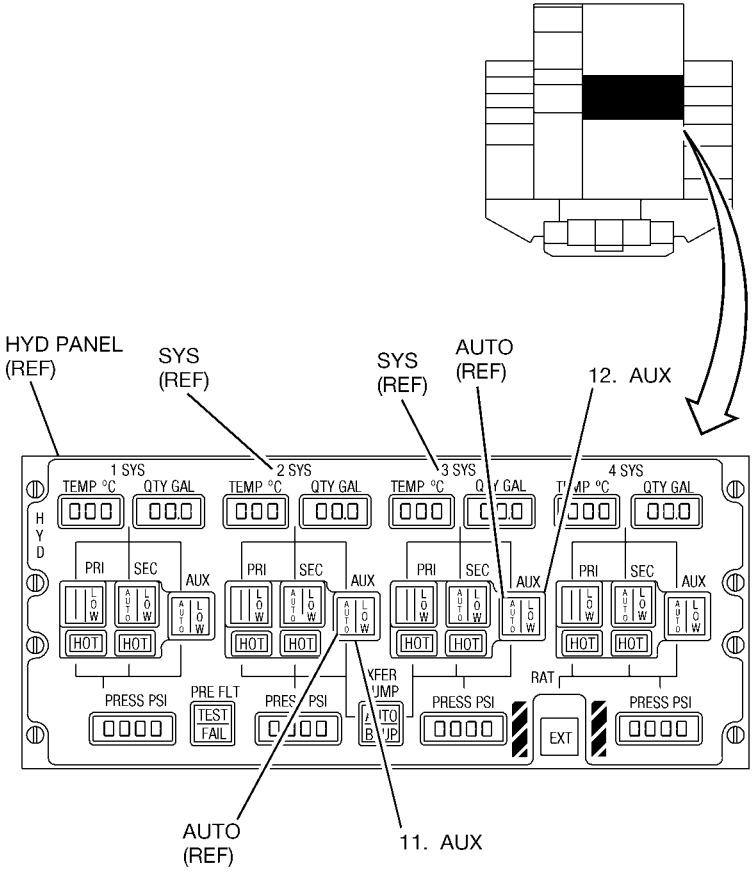
11. Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off (29-30-AD-_).

12. Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light goes off (29-30-AD-_).

13. Shutdown mission computing system (34-62-02, task 02-3).



ICN-88277-G2780016-002-01

PRIMARY SLAT ACTUATION SYSTEM BLEED (27-80-02)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

02-1. Preparation.
02-2. Slat actuation system bleed.
02-3. Follow-on maintenance.

Additional data:

	Task
AFI 21-101	02-1
TO 00-20-1	02-1
TO 1300i-2-00GV-00-1	02-1
TO 1300i-2-12JG-29-1	02-1, 02-3
TO 1300i-2-23JG-40-1	02-1, 02-3
TO 1300i-2-27JG-80-2	02-2

Personnel recommended:

	Task
Two	All
Person (A) performs task.	
Person (B) assists person (A).	

Safety conditions:

	Task
NA	--

Support equipment:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

Supplies:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

02-1. PREPARATION.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

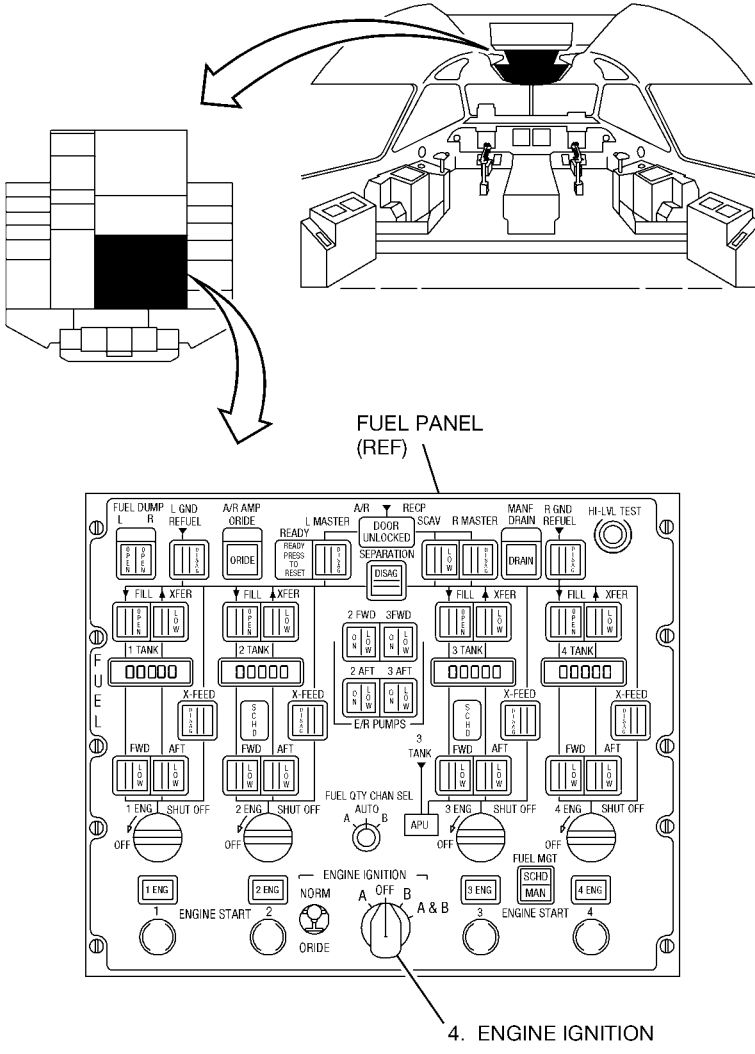
2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

3. Perform maintenance interphone operation (23-41-02, task 02-3).

WARNING

Warning tags shall be attached to all opened circuit breakers as directed by the technical order and an applicable warning statement shall be entered in the AFTO Form/IMT 781A, IAW TO 00-20-1, AFI 21-101 and TO 1300i-2-00GV-00-1, Chapter 5 anytime exiting cockpit circuit breaker area before task completion or there is a delay in maintenance where task cannot be fully accomplished. Failure to comply may cause injury to personnel or damage to aircraft.

4. (A) Ensure **ENGINE IGNITION** switch on **FUEL** panel is **OFF**.



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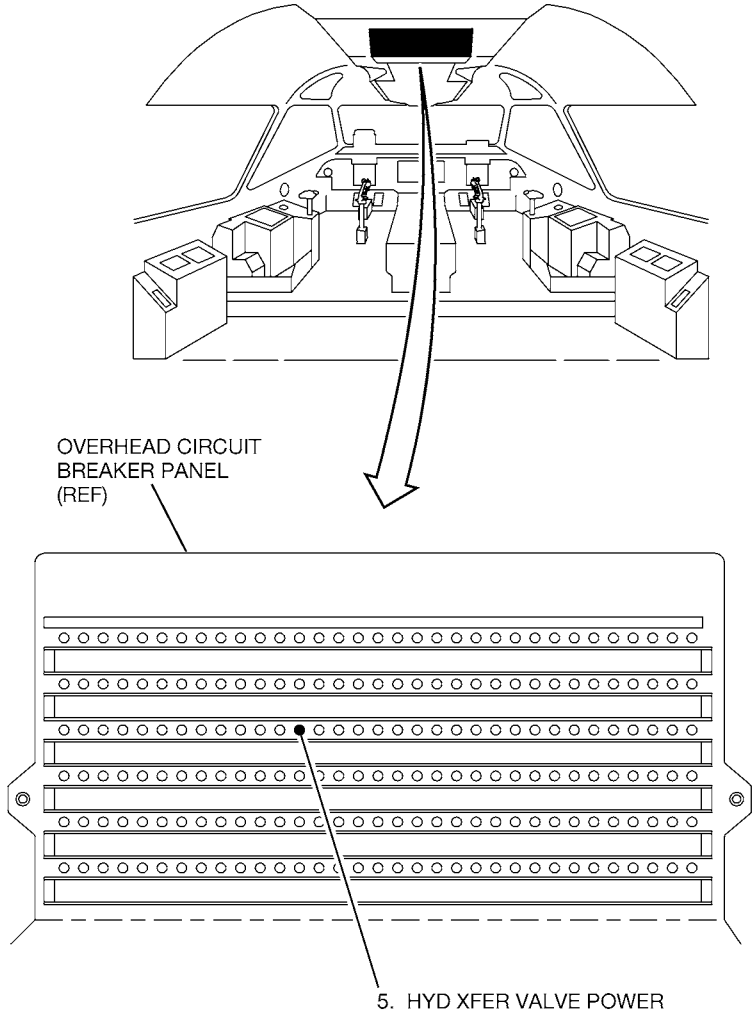
5. (A) Open **HYD XFER VALVE POWER** circuit breaker on overhead circuit breaker panel, row **C**, column **13**.



ICN-88277-G2780018-002-01

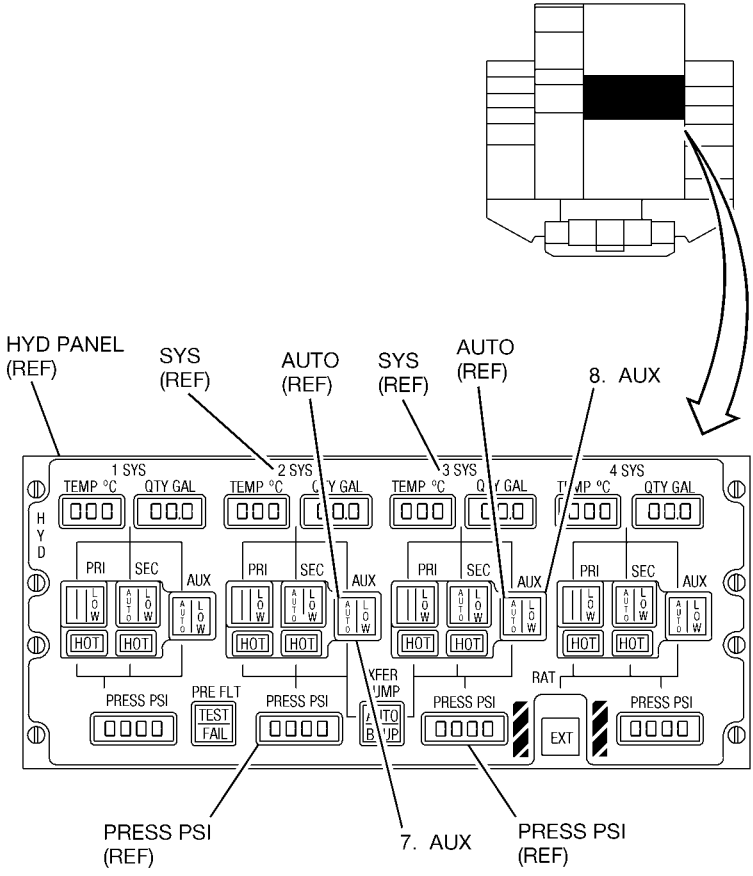
6. Observe hydraulic systems 2 and 3 reservoir sight gauge for fluid quantity (TO 1300i-2-12JG-29-1, 12-29-00, para 1-9).

7. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

   - **AUTO** light comes on.
   - **PRESS PSI** indicator reads 3800-4200.

8. (A) Press **3 SYS**, **AUX** switchlight.

   - **AUTO** light comes on.
   - **PRESS PSI** indicator reads 3800-4200.



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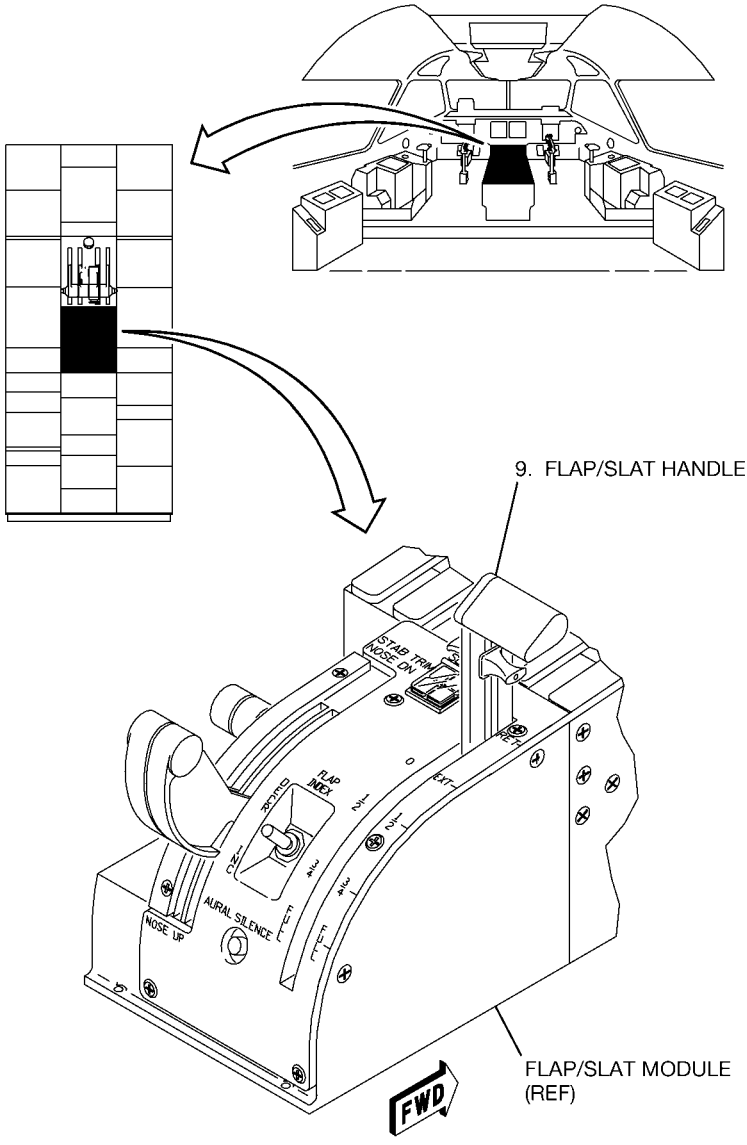
9. (A) Set flap/slat handle on flap/slat module to **0/EXT** position.



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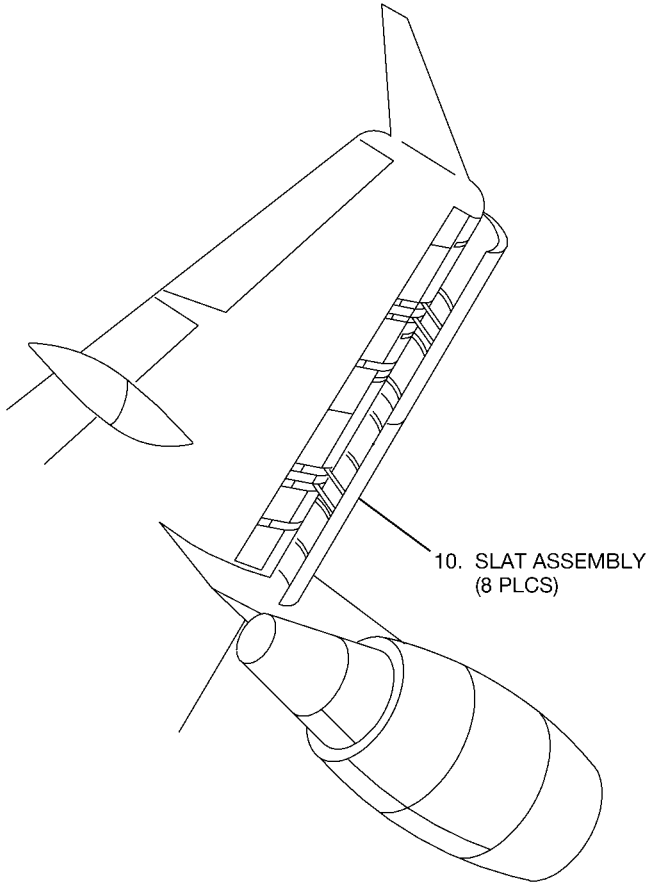
10. (B) Ensure slat assemblies move to extended position.



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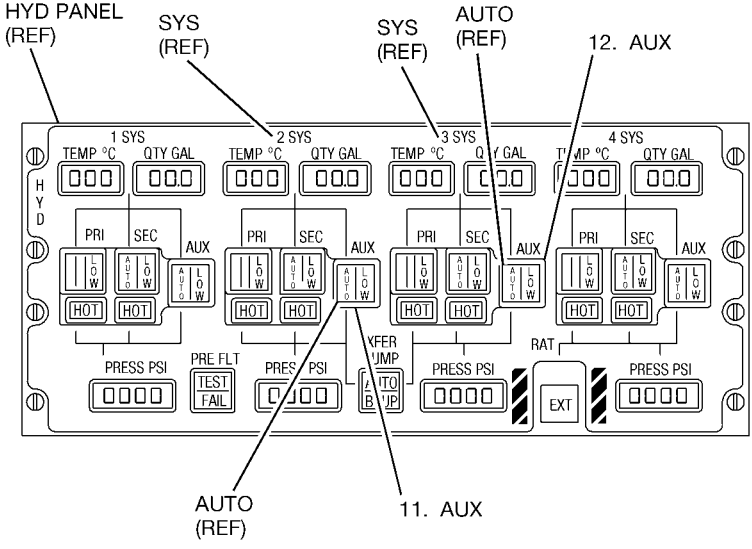
11. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

12. (A) Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light goes off.



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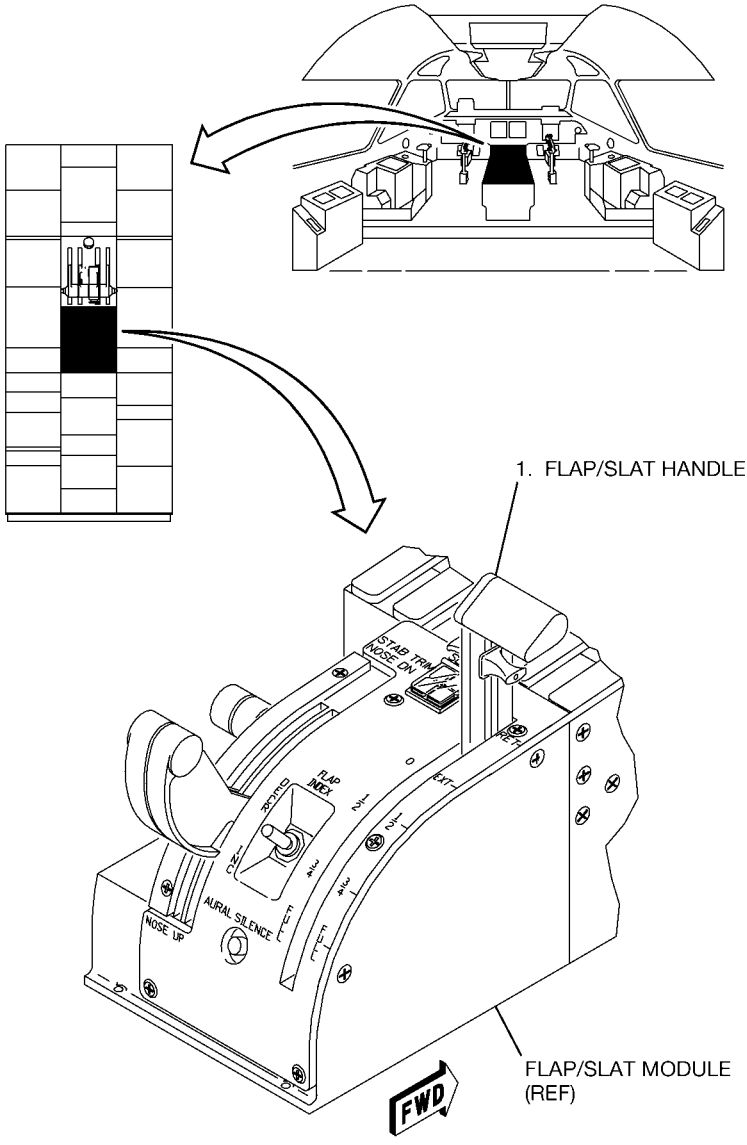
02-2. SLAT ACTUATION SYSTEM BLEED.

NOTE

Steps 1 thru 9 shall be performed five times consecutively to properly accomplish slat actuation system bleed.

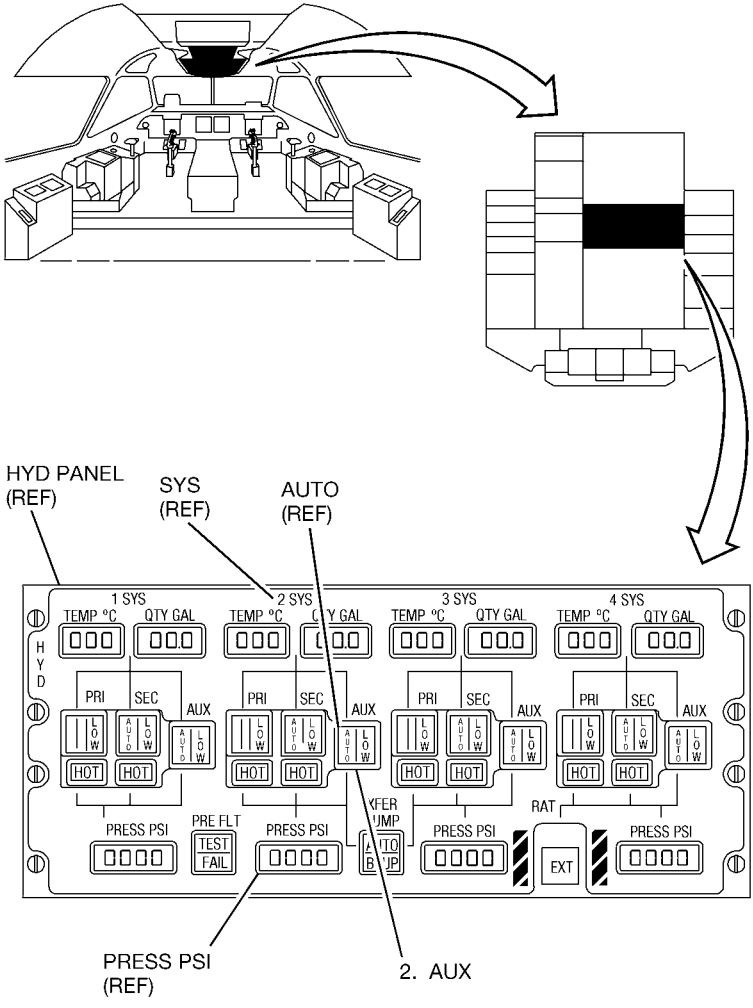
1. (A) Set flap/slat handle on flap/slat module to **UP/RET** position.



ICN-88277-G2780021-003-01

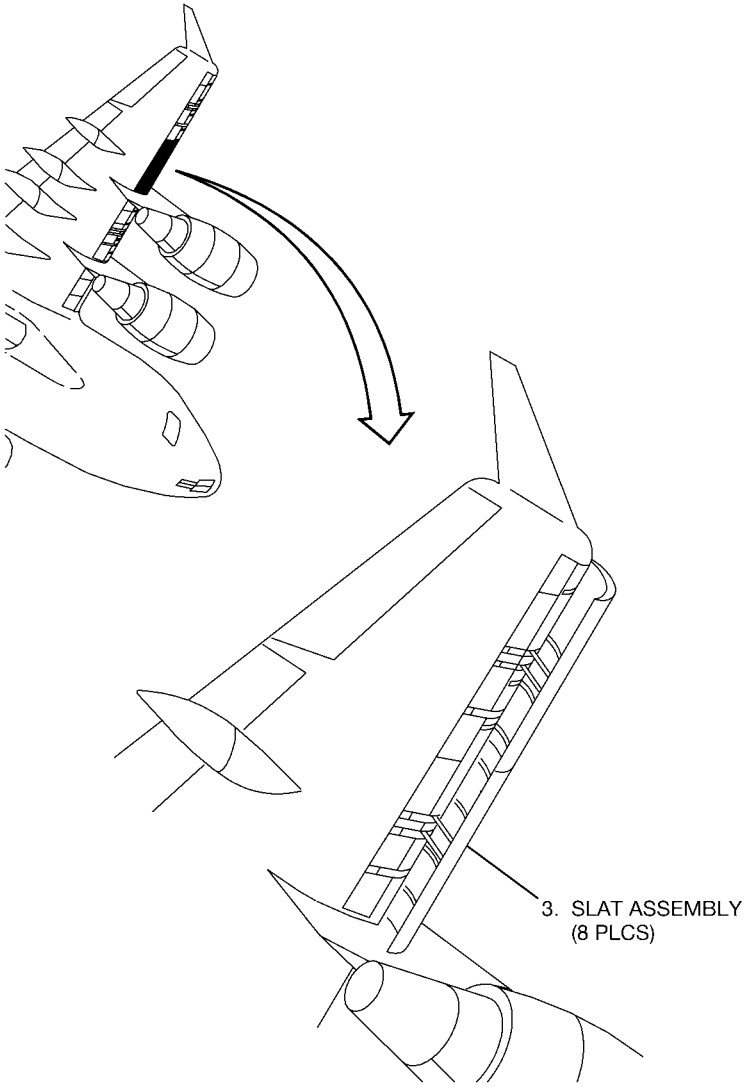
2. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780022-002-01

3. (B) Ensure slat assemblies move to retracted position.

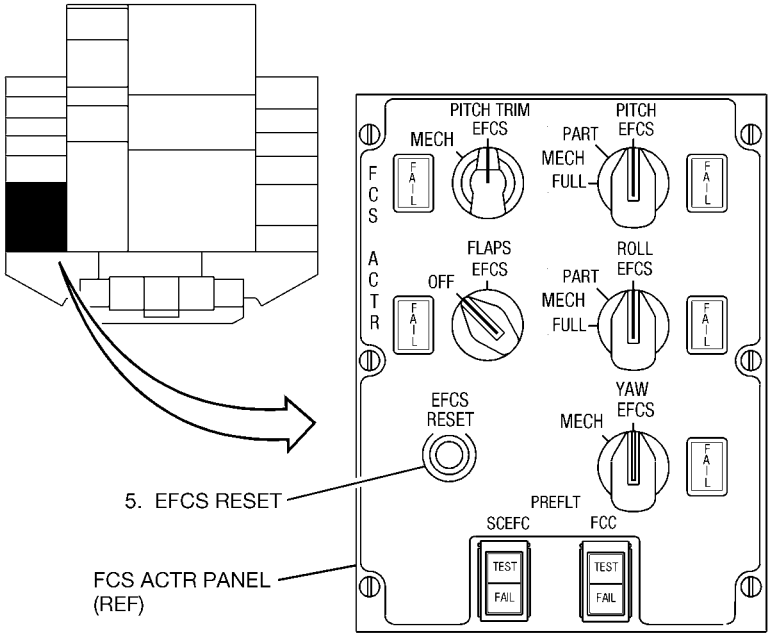


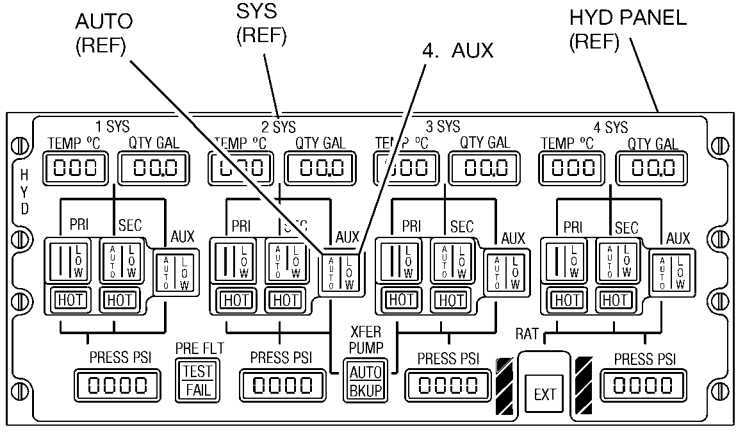
ICN-88277-G2780023-002-01

4. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

5. (A) Press **EFCS RESET** button on **FCS ACTR** panel.

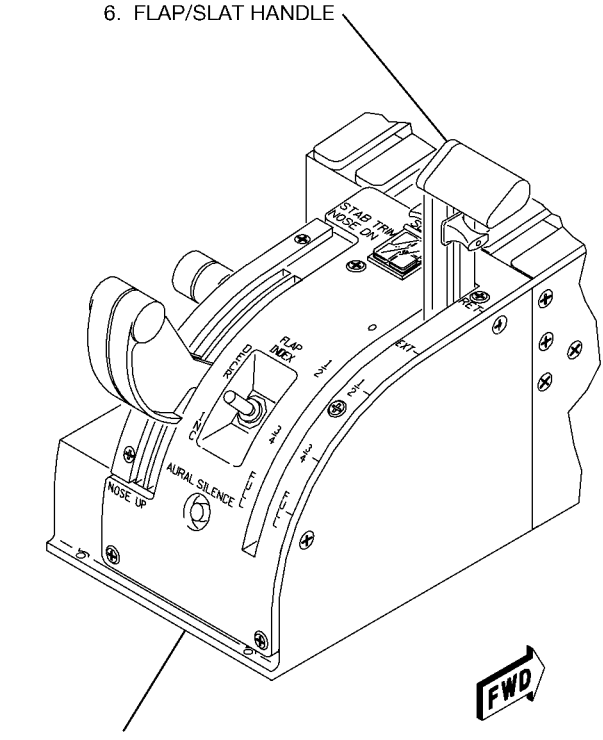




(TYPICAL)

ICN-88277-G2780024-003-01

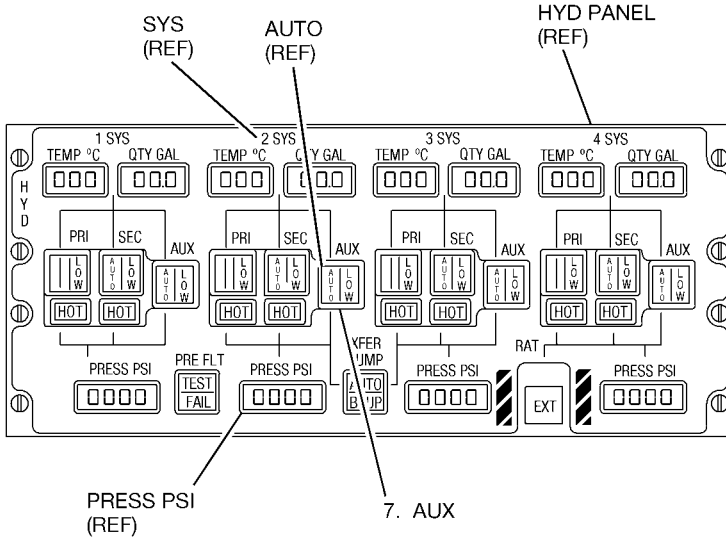
6. (A) Set flap/slat handle on center pedestal flap/slat module to **O/EXT** position.



ICN-88277-G2780025-002-01

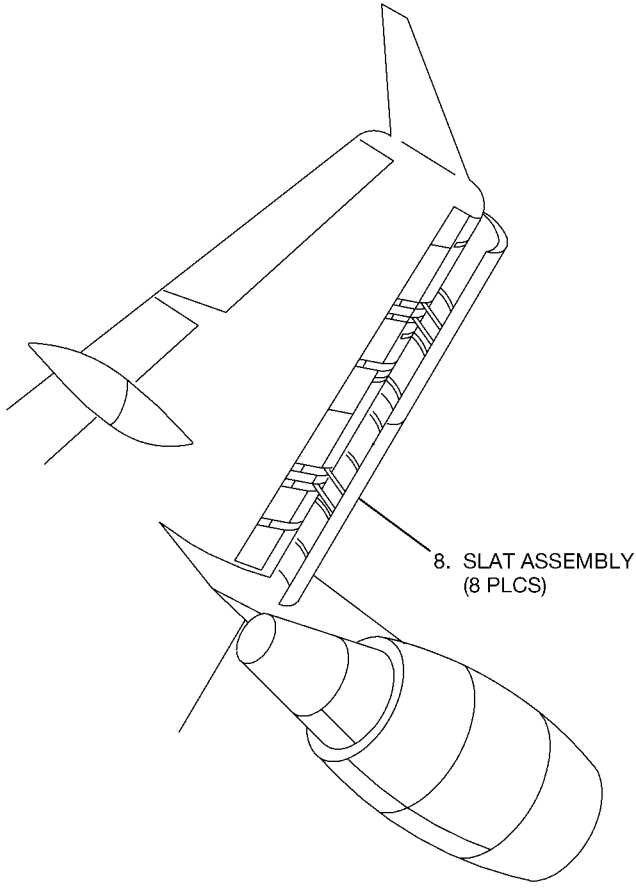
7. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780026-002-01

8. (B) Ensure slat assemblies move to extend position.

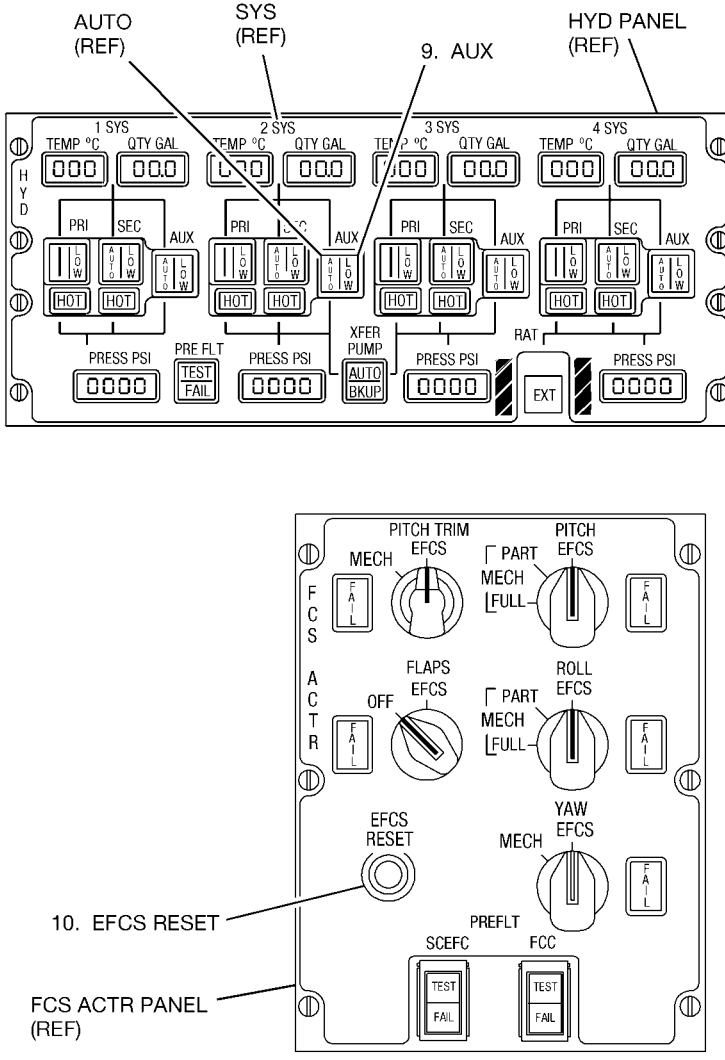


ICN-88277-G2780027-002-01

9. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

10. (A) Press **EFCS RESET** button on **FCS ACTR** panel.



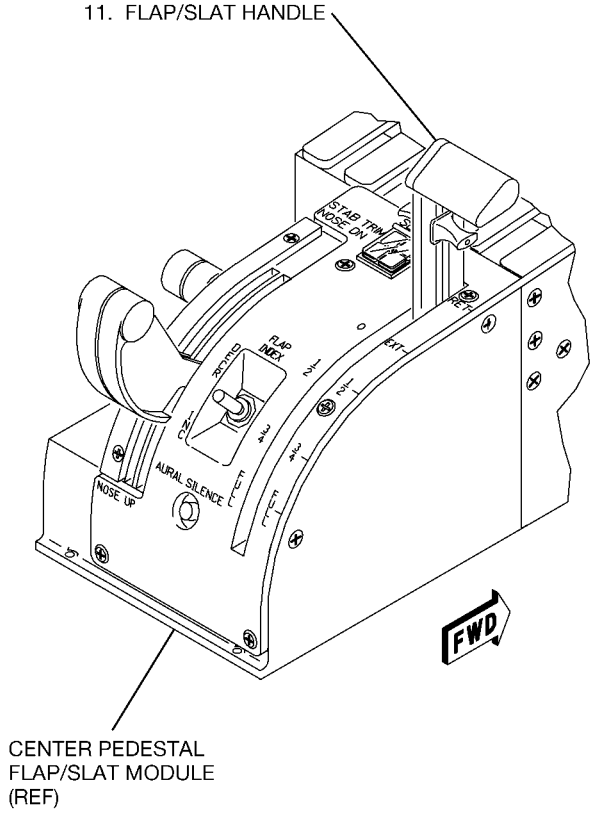
(TYPICAL)

ICN-88277-G2780028-003-01

NOTE

Steps 11 thru 19 shall be performed five times consecutively to properly accomplish slat actuation bleed.

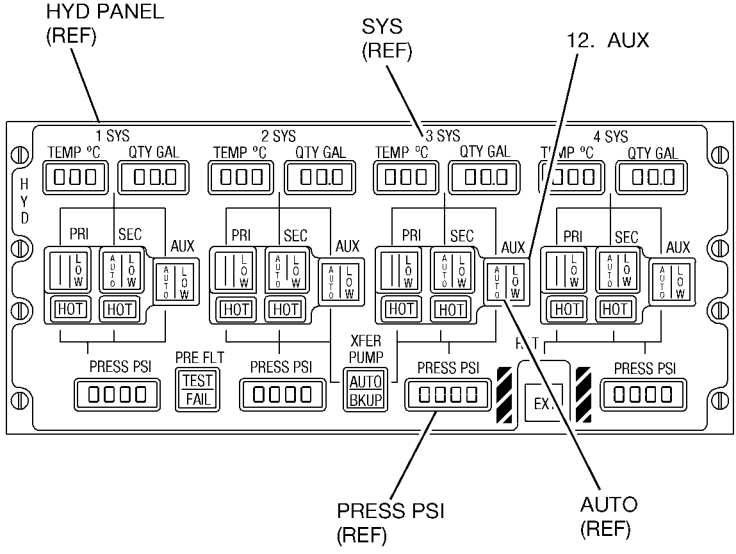
11. (A) Operate flap/slat handle on center pedestal flap/slat module to **UP/RET** position.



ICN-88277-G2780029-002-01

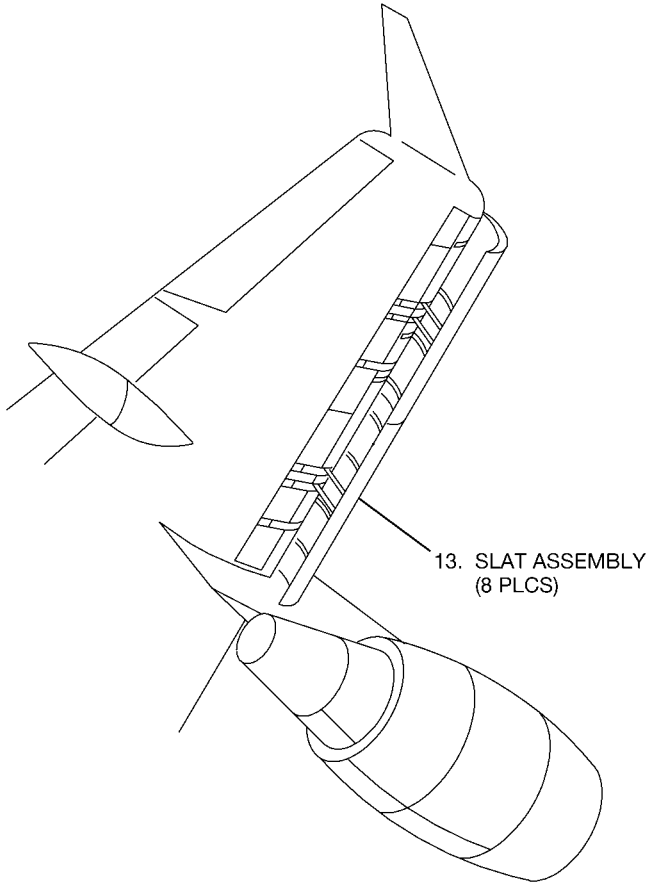
12. (A) Press **3 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780030-002-01

13. (B) Ensure slat assemblies move to retracted position.

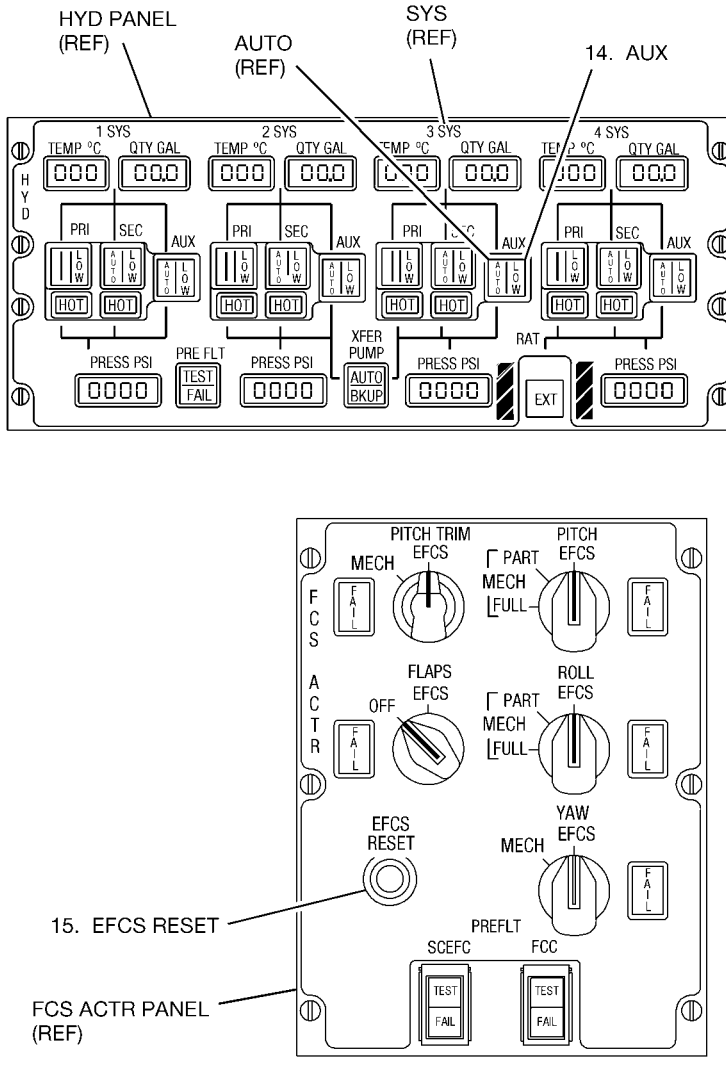


ICN-88277-G2780031-002-01

14. (A) Press **3 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

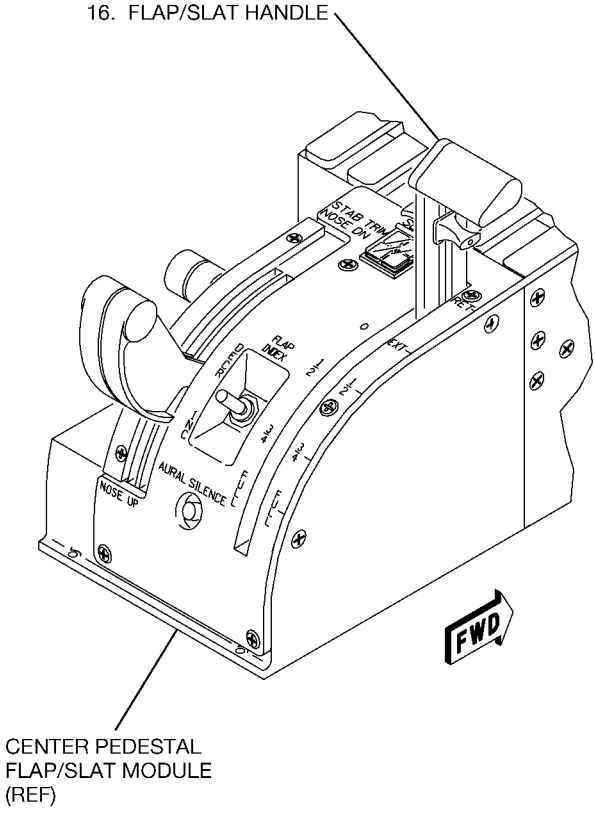
15. (A) Press **EFCS RESET** button on **FCS ACTR** panel.



(TYPICAL)

ICN-88277-G2780032-003-01

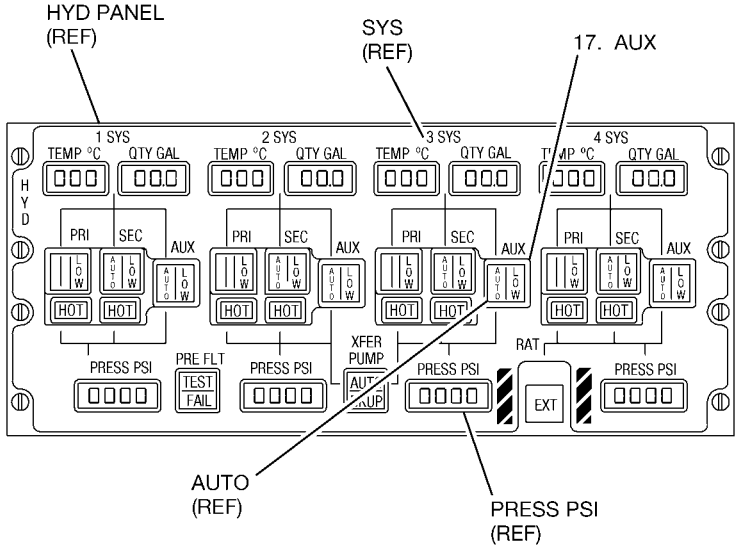
16. (A) Set flap/slat handle on center pedestal flap/slat module to **O/EXT** position.



ICN-88277-G2780033-002-01

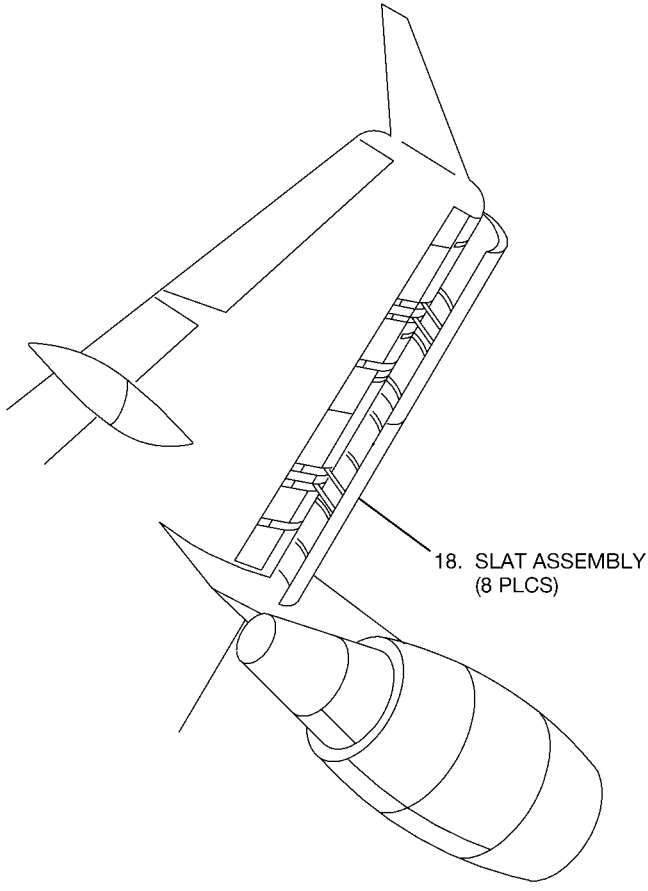
17. (A) Press **3 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780034-002-01

18. (B) Ensure slat assemblies move to extend position.

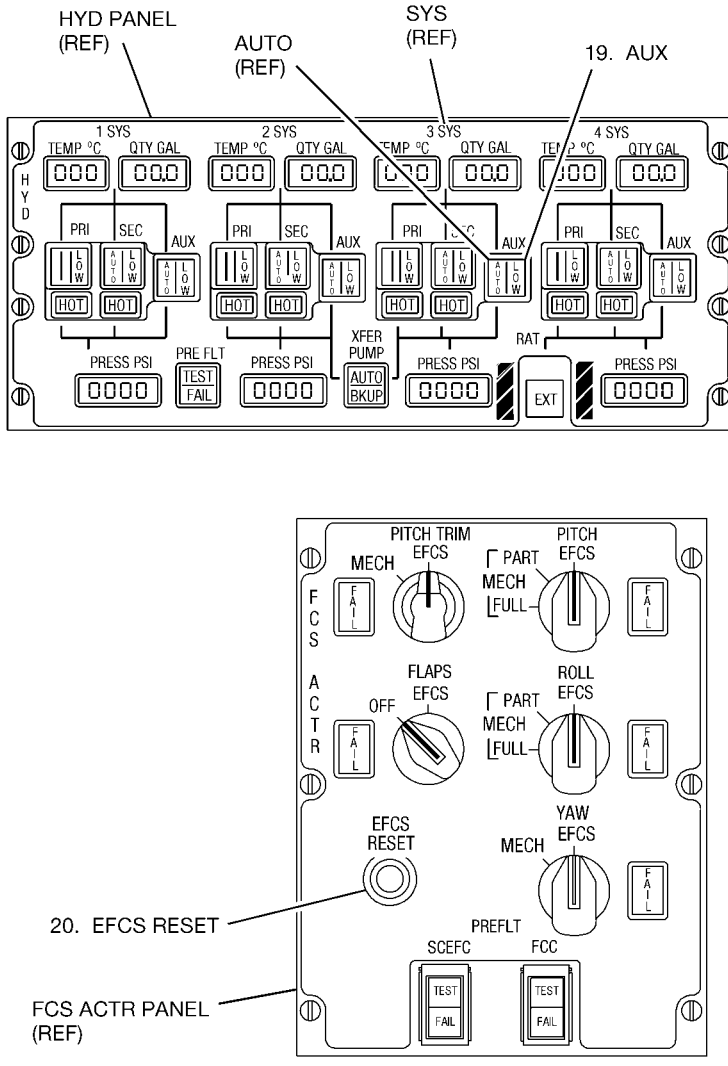


ICN-88277-G2780035-002-01

19. (A) Press **3 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

20. (A) Press **EFCS RESET** button on **FCS ACTR** panel.



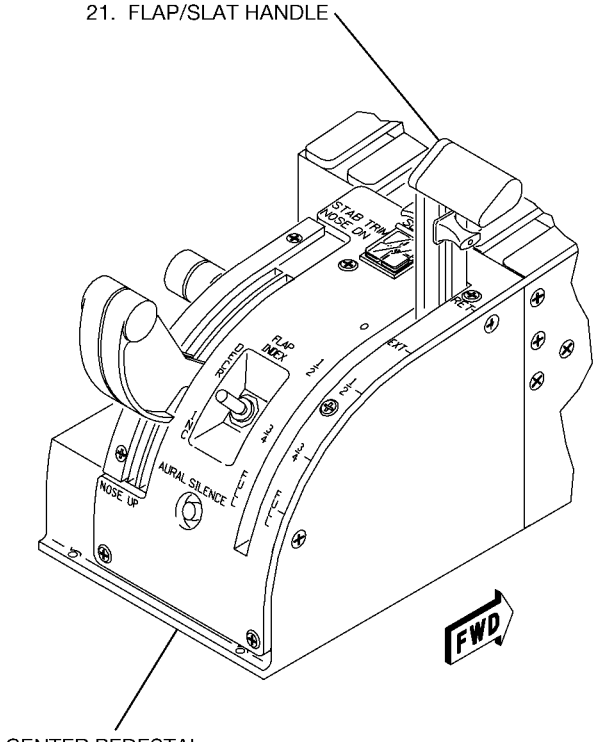
(TYPICAL)

ICN-88277-G2780036-003-01

NOTE

Steps 21 thru 33 shall be performed five times consecutively to properly accomplish slat actuation system bleed.

21. (A) Set flap/slat handle on center pedestal flap/slat module to **UP/RET** position.



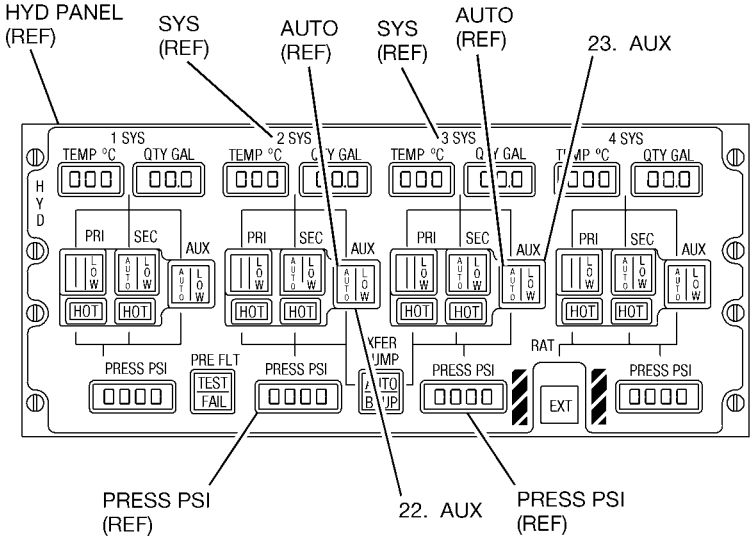
ICN-88277-G2780037-002-01

22. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.

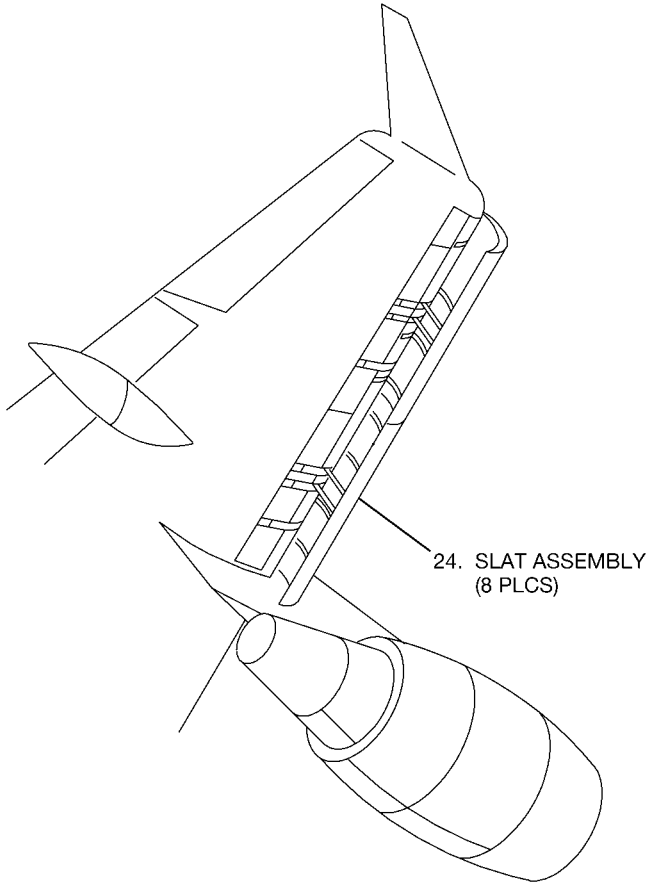
23. (A) Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780038-002-01

24. (B) Ensure slat assemblies move to retracted position.



ICN-88277-G2780039-002-01

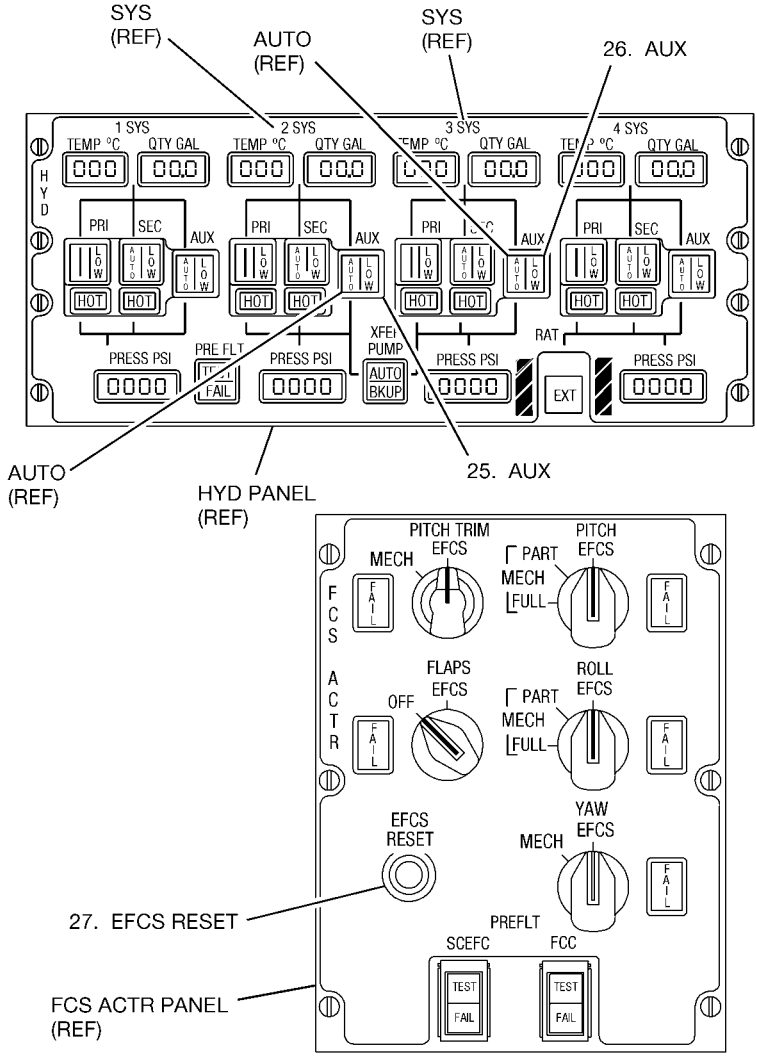
25. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light goes off.

26. (A) Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light goes off.

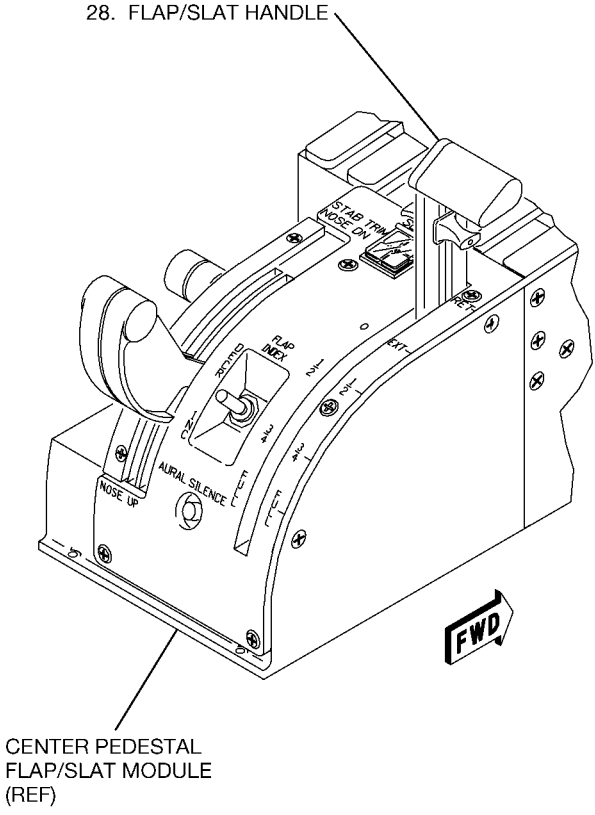
27. (A) Press **EFCS RESET** button on **FCS ACTR** panel.



(TYPICAL)

ICN-88277-G2780040-003-01

28. (A) Set flap/slat handle on center pedestal flap/slat module to **O/EXT** position.



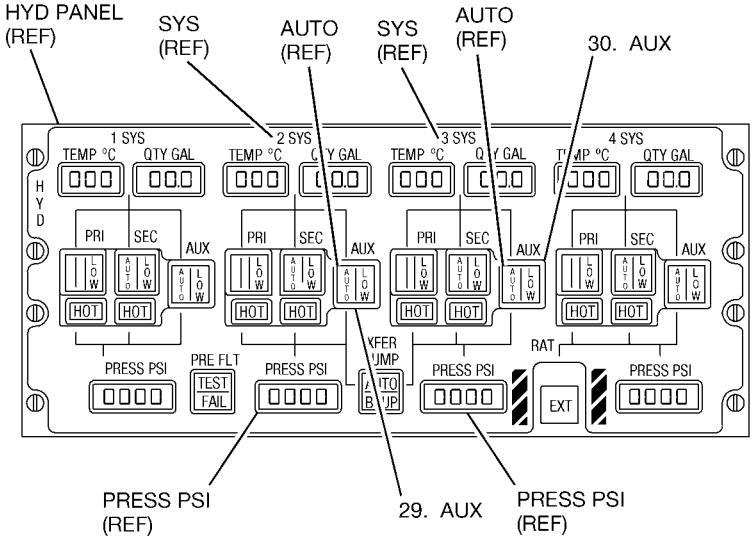
ICN-88277-G2780041-002-01

29. (A) Press **2 SYS**, **AUX** switchlight on **HYD** panel.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.

30. (A) Press **3 SYS**, **AUX** switchlight.

    - **AUTO** light comes on.
    - **PRESS PSI** indicator reads 3800-4200.



ICN-88277-G2780042-002-01

31. (B) Ensure slat assemblies move to extend position.