

# TO 1300i-2-27JG-00-1

---

## TECHNICAL MANUAL

### JOB GUIDE

### ORGANIZATIONAL MAINTENANCE

## FLIGHT CONTROLS GENERAL

(27-00-00 THROUGH 27-00-06)

### USAF SERIES

### 300i

### AIRCRAFT

MCDONNELL DOUGLAS CORPORATION

MILITARY TRANSPORT AIRCRAFT

F33657-81-C-2108

FA8526-21-D-0001

THIS MANUAL SUPERSEDES TO 1300i-2-27JG-00-1 DATED 1 MAY 2022.

DISCLOSURE NOTICE - This information is furnished upon the condition that it will not be released to another nation without the specific authority of the Department of the Air Force of the United States; that it will be used for military purposes only; that individual or corporate rights originating in the information, whether patented or not, will be respected; that the recipient will report promptly to the United States, any known or suspected compromise; and that the information will be provided substantially the same degree of security afforded it by the Department of Defense of the United States. Also, regardless of any other markings on the document, it will not be downgraded or declassified without written approval of the originating United States agency.

DISTRIBUTION STATEMENT D - Distribution authorized to the Department of Defense and U.S. DoD contractors only; (Administrative and Operational Use); (12 May 2001). Other requests for this documentation shall be referred to AFLCMC/WLM, Robins AFB, GA 31098-2428.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec. 2751 et seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App. 2401 et seq.), as amended. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

HANDLING AND DESTRUCTION NOTICE - Comply with distribution statement and destroy by any method that will prevent disclosure of the contents or reconstruction of the document.

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

Published under authority of the Secretary of the Air Force

---

1 APRIL 2023

# TO 1300i-2-27JG-00-1

---

---

Published under authority of the Secretary of the Air Force

**T-2**

**1 APRIL 2023**

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 DESTROY SUPERSEDED PAGES.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 Apr 23

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 146 CONSISTING OF THE FOLLOWING:

Page No.	* Change No.	Page No.	* Change No.
Title thru T-2 . . . . .	0		
A. . . . .	0		
B blank . . . . .	0		
i thru xxxiv . . . . .	0		
1-1 thru 1-2 . . . . .	0		
2-1 thru 2-41 . . . . .	0		
2-42 blank . . . . .	0		
2-43 thru 2-55 . . . . .	0		
2-56 blank . . . . .	0		
2-57 thru 2-58 . . . . .	0		
2-59 blank . . . . .	0		
2-60 thru 2-64 . . . . .	0		
2-65 blank . . . . .	0		
2-66 thru 2-67 . . . . .	0		
2-68 blank . . . . .	0		
2-69 thru 2-70 . . . . .	0		
2-71 blank . . . . .	0		
2-72 thru 2-75 . . . . .	0		
2-76 blank . . . . .	0		
2-77 thru 2-78 . . . . .	0		
2-79 blank . . . . .	0		
2-80 thru 2-89 . . . . .	0		
2-90 blank . . . . .	0		
2-91 thru 2-92 . . . . .	0		
2-93 blank . . . . .	0		
2-94 thru 2-105 . . . . .	0		
2-106 blank . . . . .	0		

\*Zero in this column indicates an original page.



# TABLE OF CONTENTS

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
INTRODUCTION		
Scope . . . . .		xxxiii
Model(s) covered . . . . .		xxxiii
Abbreviations . . . . .		xxxiii
Change request . . . . .		xxxiii
300i TO information . . . . .		xxxiii
List of Time Compliance Technical Orders (TCTO) . .		xxxiv
1. GENERAL INFORMATION (27-00-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
2. MAINTENANCE INSTRUCTIONS		
Flight controls system major rig . . . . .	27-00-01	
Flight controls system minor rig . . . . .	27-00-02	
Spoiler control/electronic flap computer preflight built-in test . . . . .		27-00-03
Spoiler control/electronic flap computer electrical operational checkout . . . . .		27-00-04
EFCS/SCEFC fault list and history interrogation . . . . .		27-00-05
Spoiler control/electronic flap computer WCC maintenance built-in test . . . . .		27-00-06

## TO 1300i-2-27JG-10-1 FLIGHT CONTROLS AILERON (27-10-00 - 27-11-02)

INTRODUCTION		
Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-10-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Mechanical test-roll maintenance built-in test . . .	27-10-01	
Aileron mechanical controls and surfaces system operational checkout . . . . .	27-11-01	
Aileron mechanical controls and surfaces system repair . . . . .	27-11-02	

TO 1300i-2-27JG-10-2 FLIGHT  
CONTROLS AILERON  
(27-10-00 AND 27-11-03)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-10-00)	
General information . . . . .	1-1
Aileron rig load vs. temperature chart . . . . .	1-1
Cable tension regulator compensation . . . . .	1-4
General warnings, cautions, and notes . . . . .	1-6
2. MAINTENANCE INSTRUCTIONS	

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Aileron mechanical controls and surfaces system adjustment . . . . .		27-11-03

TO 1300i-2-27JG-10-3 FLIGHT  
CONTROLS AILERON  
(27-10-00 AND 27-11-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-10-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS	
Control stick assembly (2711AA001, 2711AA002) . . . . .	27-11-10

TO 1300i-2-27JG-10-4  
FLIGHT CONTROLS AILERON  
(27-10-00 AND 27-11-11 - 27-11-14)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
1. GENERAL INFORMATION (27-10-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Aileron control bellcrank assembly (2711AA125, 2711AA126) . . . . .		27-11-11
Aileron control idler arm crank assembly (2711MP011, 2711MP012) . . . . .		27-11-12
Pilot aileron load feel control assembly (2711AA017) . . . . .		27-11-13
Copilot aileron load feel control assembly (2711AA018) . . . . .		27-11-14

TO 1300i-2-27JG-10-5  
FLIGHT CONTROLS AILERON  
(27-10-00 AND 27-11-15 - 27-11-18)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
✚ 300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-10-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Aileron ratio changer control assembly (2711AA006) . . . . .		27-11-15
Aileron linear-ratio changer electro-mechanical actuator (2711AA003) . . . . .		27-11-16



<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Aileron center wing mechanism assembly (2711AA011) . . . . .		27-11-17
Aileron control cable valve input mechanism assembly (2711AA012, 2711AA013) . . . . .		27-11-18

TO 1300i-2-27JG-10-6 FLIGHT  
CONTROLS AILERON  
(27-10-00 AND 27-11-19)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-10-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS	
Aileron assembly (2711AA015, 2711AA016) . . .	27-11-19

TO 1300i-2-27JG-10-7 FLIGHT  
CONTROLS AILERON  
(27-10-00 AND 27-11-20)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
1. GENERAL INFORMATION (27-10-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Aileron cable assembly (2711MP008, 2711MP013 thru 2711MP016, 2711MP090 thru 2711MP093, 2711MP111, 2711MP112, 2711MP114, 2711MP160, 2711MP162) . . . . .		27-11-20
TO 1300i-2-27JG-10-8 FLIGHT CONTROLS AILERON (27-10-00 AND 27-11-20)		
INTRODUCTION		
Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-10-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Aileron cable assembly (2711MP008, 2711MP013 thru 2711MP016, 2711MP090 thru 2711MP093, 2711MP111, 2711MP112, 2711MP114, 2711MP160, 2711MP162) . . . . .		27-11-20

**SECTION****TO NO.****S/S/SN  
or PAGE**

TO 1300i-2-27JG-10-9  
FLIGHT CONTROLS AILERON  
(27-10-00 AND 27-11-21 - 27-13-10)

**INTRODUCTION**

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

**1. GENERAL INFORMATION (27-10-00)**

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2

**2. MAINTENANCE INSTRUCTIONS**

Adjustable push-pull control ratio changer connecting link (2711MP010) . . . . .	27-11-21
Aileron trim system operational checkout . . . . .	27-12-01
Aileron trim electro-mechanical linear actuator (2712AA001) . . . . .	27-12-10
Trim control panel assembly (2712CT001) . . . . .	27-12-11
Aileron actuating cylinder assembly (2713HP001 thru 2713HP004) . . . . .	27-13-10

TO 1300i-2-27JG-10-10  
FLIGHT CONTROLS AILERON  
(27-10-00 AND 27-13-11 - 27-15-10)

**INTRODUCTION**

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv

# 1. GENERAL INFORMATION (27-10-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2

# 2. MAINTENANCE INSTRUCTIONS

Aileron integrated flight control module (2713FV001, 2713FV002) . . . . .	27-13-11
Aileron trim position indicator (2714MN001) . . .	27-14-10
Aileron position-rotary variable differential transducer sensor (2715AS001 thru 2715AS004) . . . . .	27-15-10

## TO 1300i-2-27JG-20-1 FLIGHT CONTROLS RUDDER (27-20-00 - 27-21-03)

# INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

# 1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
Rudder rig load vs. temperature chart . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-4

# 2. MAINTENANCE INSTRUCTIONS

Rudder system operational checkout . . . . .	27-20-01
--	----------

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Rudder mechanical controls and surfaces system operational checkout . . . . .		27-21-01
Mechanical controls and surfaces system adjustment . . . . .		27-21-02
Rudder mechanical controls and surfaces system repair . . . . .		27-21-03

TO 1300i-2-27JG-20-2  
FLIGHT CONTROLS RUDDER  
(27-20-00 AND 27-21-10 - 27-21-14)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
Rudder rig load vs. temperature chart . . . . .	1-2
General warnings, cautions, and notes . . . . .	1-5

## 2. MAINTENANCE INSTRUCTIONS

Direction control pedal assembly (2721AA001 thru 2721AA004) . . . . .	27-21-10
Rudder pedal support assembly (2721AA005 thru 2721AA008) . . . . .	27-21-11
Direction control pedal support assembly (2721AA009 thru 2721AA012) . . . . .	27-21-12
Cartridge-rudder and elevator force limiter spring assembly (2721AA023) . . . . .	27-21-13
Rudder pedal stature adjust crank assembly (2721AA015, 2721AA016) . . . . .	27-21-14

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-20-3  
FLIGHT CONTROLS RUDDER  
(27-20-00 AND 27-21-15 - 27-21-18)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1

2. MAINTENANCE INSTRUCTIONS

Rudder trim and simulated load feel control assembly (2721AA022) . . . . .	27-21-15
Rudder load feel and trim fail centering mechanism assembly (2721AA021) . . . . .	27-21-16
Forward rudder mechanism assembly (2721AA024) . . . . .	27-21-17
Lower rudder vertical stabilizer control assembly (2721AA025) . . . . .	27-21-18

TO 1300i-2-27JG-20-4 FLIGHT  
CONTROLS RUDDER  
(27-20-00 AND 27-21-19)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-20-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
2. MAINTENANCE INSTRUCTIONS		
Rudder assembly (2721AA026 thru 2721AA029) . . . . .		27-21-19
TO 1300i-2-27JG-20-5 FLIGHT CONTROLS RUDDER (27-20-00 AND 27-21-20 - 27-22-01)		

## INTRODUCTION

Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-20-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
2. MAINTENANCE INSTRUCTIONS		
Rudder cable assembly (2721MP016, 2721MP017, 2721MP087 thru 2721MP090) . . . . .		27-21-20
Rudder trim system operational checkout . . . . .		27-22-01

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-20-6 FLIGHT  
CONTROLS RUDDER  
(27-20-00 AND 27-22-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2

2. MAINTENANCE INSTRUCTIONS

Rudder trim electro-mechanical actuator (2722AA001) . . . . .	27-22-10
--	----------

TO 1300i-2-27JG-20-7 FLIGHT  
CONTROLS RUDDER  
(27-20-00 AND 27-23-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
-------------------------------	-----



<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
----------------	---------------	---------------------------

General warnings, cautions, and notes . . . . .	1-2
---	-----

2. MAINTENANCE INSTRUCTIONS

Rudder integrated flight control module (2723FV001, 2723FV002) . . . . .	27-23-10
---	----------

TO 1300i-2-27JG-20-8  
FLIGHT CONTROLS RUDDER  
(27-20-00 AND 27-23-11 - 27-25-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iv
List of Time Compliance Technical Orders (TCTO) . .	v

1. GENERAL INFORMATION (27-20-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1

2. MAINTENANCE INSTRUCTIONS

Rudder linear actuating cylinder assembly (2723HP001 thru 2723HP004) . . . . .	27-23-11
Rudder drive hinge assembly (2724MP001, 2724MP004, 2724MP009, 2724MP012) . . . . .	27-24-10
Rudder trim indicator (2725MN001) . . . . .	27-25-10

TO 1300i-2-27JG-30-1 FLIGHT  
CONTROLS ELEVATOR  
(27-30-00 - 27-31-03)

INTRODUCTION

Scope . . . . .	iii
-----------------	-----

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-30-00)		
General information . . . . .		1-1
Elevator rig load vs. temperature chart . . . . .		1-2
Cable tension regulator compensation . . . . .		1-4
General warnings, cautions, and notes . . . . .		1-7
2. MAINTENANCE INSTRUCTIONS		
Mechanical test-pitch maintenance built-in test . .	27-30-01	
Mechanical controls and surfaces system operational checkout . . . . .	27-31-01	
Mechanical controls and surfaces system adjustment . . . . .	27-31-02	
Elevator mechanical controls and surfaces system repair . . . . .	27-31-03	

TO 1300i-2-27JG-30-2  
FLIGHT CONTROLS ELEVATOR  
(27-30-00 AND 27-31-10 - 27-31-13)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-30-00)	
General information . . . . .	1-1

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Elevator rig load vs. temperature chart . . . . .		1-2
Cable tension regulator compensation . . . . .		1-4
General warnings, cautions, and notes . . . . .		1-7
 2. MAINTENANCE INSTRUCTIONS		
Pilot elevator artificial feel control assembly (2731AA001) . . . . .		27-31-10
Copilot elevator artificial feel control assembly (2731AA002) . . . . .		27-31-11
Linear-ratio changer electro-mechanical actuator (2731AA010) . . . . .		27-31-12
Elevator control mechanism assembly (2731AA005) . . . . .		27-31-13

TO 1300i-2-27JG-30-3  
FLIGHT CONTROLS ELEVATOR  
(27-30-00 AND 27-31-14 - 27-31-17)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-30-00)

General information . . . . .	1-1
Elevator rig load vs. temperature chart . . . . .	1-2
Cable tension regulator compensation . . . . .	1-4
General warnings, cautions, and notes . . . . .	1-7

## 2. MAINTENANCE INSTRUCTIONS

Elevator control bellcrank assembly (2731MP037) . . . . .	27-31-14
--	----------

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Elevator cable crank control assembly (2731AA006 thru 2731AA009) . . . . .		27-31-15
Elevator assembly (2731AA012 thru 2731AA015) . . . . .		27-31-16
Aft fuselage elevator input control link assembly (2731MP038) . . . . .		27-31-17

TO 1300i-2-27JG-30-4 FLIGHT  
CONTROLS ELEVATOR  
(27-30-00 AND 27-31-18)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-30-00)

General information . . . . .	1-1
Elevator rig load vs. temperature chart . . . . .	1-2
Cable tension regulator compensation . . . . .	1-4
General warnings, cautions, and notes . . . . .	1-7

2. MAINTENANCE INSTRUCTIONS

Elevator cable assembly (2731MP001, 2731MP005 thru 2731MP015, 2731MP047 thru 2731MP054) . . . . .	27-31-18
---	----------

TO 1300i-2-27JG-30-5  
FLIGHT CONTROLS ELEVATOR  
(27-30-00 AND 27-31-19 - 27-33-11)

INTRODUCTION

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
 1. GENERAL INFORMATION (27-30-00)		
General information . . . . .		1-1
Elevator rig load VS. temperature chart . . . . .		1-2
Cable tension regulator compensation . . . . .		1-5
General warnings, cautions, and notes . . . . .		1-7
 2. MAINTENANCE INSTRUCTIONS		
Elevator force limiter spring assembly (2731AA003) . . . . .		27-31-19
Pitch damper (2731UU001) . . . . .		27-31-20
Elevator integrated flight control module (2733FV001 thru 2733FV004) . . . . .		27-33-10
Elevator linear actuating cylinder assembly (2733HP001 thru 2733HP008) . . . . .		27-33-11
 TO 1300i-2-27JG-30-6 FLIGHT CONTROLS ELEVATOR (27-30-00 AND 27-38-10)		

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
 1. GENERAL INFORMATION (27-30-00)	

<b><u>SECTION</u></b>	<b><u>TO NO.</u></b>	<b><u>S/S/SN or PAGE</u></b>
General information . . . . .		1-1
Elevator rig load vs. temperature chart . . . . .		1-2
Cable tension regulator compensation . . . . .		1-5
General warnings, cautions, and notes . . . . .		1-7

**2. MAINTENANCE INSTRUCTIONS**

Pitch rotary variable differential transducer position sensor (2738AS001, 2738AS002) . . . . .	27-38-10
---	----------

**TO 1300i-2-27JG-40-1**

**FLIGHT CONTROLS HORIZONTAL STABILIZER  
(27-40-00 - 27-42-03)**

**INTRODUCTION**

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

**1. GENERAL INFORMATION (27-40-00)**

General information . . . . .	1-1
Pitch trim rig load vs. temperature chart . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-4

**2. MAINTENANCE INSTRUCTIONS**

Horizontal stabilizer system operational checkout . . . . .	27-40-01
Horizontal stabilizer system operation . . . . .	27-40-02
Mechanical controls and surfaces system adjustment . . . . .	27-42-01
Mechanical controls and surfaces system repair . . . . .	27-42-02

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
----------------	---------------	---------------------------

Mechanical controls and surfaces system cable tension inspection . . . . .	27-42-03
---	----------

## TO 1300i-2-27JG-40-2

**FLIGHT CONTROLS HORIZONTAL STABILIZER**  
(27-40-00 AND 27-42-10 - 27-42-12)

**INTRODUCTION**

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

**1. GENERAL INFORMATION (27-40-00)**

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1

**2. MAINTENANCE INSTRUCTIONS**

Lower pedestal control assembly (2742AA001) . . . . .	27-42-10
Vertical stabilizer pitch trim crank assembly (2742MP055, 2742MP056) . . . . .	27-42-11
Pitch trim stabilizer control valve crank assembly (2742MP061, 2742MP062, 2742MP065, 2742MP066) . . . . .	27-42-12

## TO 1300i-2-27JG-40-3

**FLIGHT CONTROLS HORIZONTAL STABILIZER**  
(27-40-00 AND 27-42-13)

**INTRODUCTION**

Scope . . . . .	iii
Model(s) covered . . . . .	iii

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
 1. GENERAL INFORMATION (27-40-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
 2. MAINTENANCE INSTRUCTIONS		
Cable assembly (2742MP003 thru 2742MP014) . . . . .		27-42-13

TO 1300i-2-27JG-40-4  
FLIGHT CONTROLS HORIZONTAL STABILIZER  
(27-40-00 AND 27-42-13)

## INTRODUCTION

Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
 1. GENERAL INFORMATION (27-40-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
 2. MAINTENANCE INSTRUCTIONS		
Cable assembly (2742MP003 thru 2742MP014) . . . . .		27-42-13



<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-40-5  
FLIGHT CONTROLS HORIZONTAL STABILIZER  
(27-40-00 AND 27-43-10 - 27-44-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-40-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS	
Pitch trim control valve (2743FV001, 2743FV002) . . . . .	27-43-10
Pitch trim system repair . . . . .	27-44-02
Pitch trim actuator assembly (2744AA001) . . . .	27-44-10

TO 1300i-2-27JG-40-6  
FLIGHT CONTROLS HORIZONTAL STABILIZER  
(27-40-00 AND 27-44-11 - 27-45-11)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300iTO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
1. GENERAL INFORMATION (27-40-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
2. MAINTENANCE INSTRUCTIONS		
Pitch trim hydraulic motor (2744AA001A, 2744AA001B) . . . . .		27-44-11
Pitch trim hydraulic brake (2744AA001C, 2744AA001D) . . . . .		27-44-12
Rigid-cable crank connecting link (2744MP006, 2744MP007) . . . . .		27-44-13
Horizontal stabilizer trim position indicator (2745MN001) . . . . .		27-45-10
Horizontal stabilizer position sensor (2745AS001, 2745AS002) . . . . .		27-45-11

TO 1300i-2-27JG-40-7  
FLIGHT CONTROLS HORIZONTAL STABILIZER  
(27-40-00 AND 27-47-10 - 27-49-11)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-40-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
2. MAINTENANCE INSTRUCTIONS		

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Horizontal stabilizer elevator actuator hinge (2747AA001 thru 2747AA004, 2747AA009 thru 2747AA012) . . . . .		27-47-10
Elevator idler hinge (2747AA005, 2747AA006, 2747AA013 thru 2747AA018) . . . . .		27-47-11
Horizontal stabilizer leading edge assembly (2748AA001 thru 2748AA008) . . . . .		27-48-10
Horizontal stabilizer tip (2748AA009, 2748AA010) . . . . .		27-48-11
Horizontal stabilizer upper movable panel (2749PA001, 2749PA002) . . . . .		27-49-10
Horizontal stabilizer lower movable panel (2749PA003, 2749PA004) . . . . .		27-49-11

TO 1300i-2-27JG-50-1  
FLIGHT CONTROLS FLAPS  
(27-50-00 - 27-50-03)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
C-300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-50-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2

## 2. MAINTENANCE INSTRUCTIONS

Flaps system operational checkout . . . . .	27-50-01
Flaps system repair . . . . .	27-50-02
Flaps system operation . . . . .	27-50-03

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-50-2  
FLIGHT CONTROLS FLAPS  
(27-50-00 AND 27-51-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-50-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS	
Flap and vane structural assembly (2751AA002 thru 2751AA005) . . . . .	27-51-10

TO 1300i-2-27JG-50-3  
FLIGHT CONTROLS FLAPS  
(27-50-00 AND 27-51-11 - 27-52-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-50-00)	
General information . . . . .	1-1

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
	General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS		
	Flap/slat module (2751AA001) . . . . .	27-51-11
	Flap actuation system operational checkout . . . .	27-52-01
	Flaps actuation system repair . . . . .	27-52-02
	Flap tandem control valve assembly (2752FV001 thru 2752FV004) . . . . .	27-52-10

TO 1300i-2-27JG-50-4  
FLIGHT CONTROLS FLAPS  
(27-50-00 AND 27-52-11 - 27-56-10)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-50-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2

## 2. MAINTENANCE INSTRUCTIONS

Flap actuator cylinder assembly (2752HP001 thru 2752HP008) . . . . .	27-52-11
Excitation resistor module assembly (2752AA001 thru 2752AA004) . . . . .	27-52-20
Position indicating system operational checkout . . . . .	27-53-01
Flap position transmitter (2753AS001 thru 2753AS004) . . . . .	27-53-11

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Combined flap index position indicator (2753DD002) . . . . .		27-53-13
Aft flap fairing tail cone assembly (2756FA007, 2756FA008, 2756FA015, 2756FA016, 2756FA023, 2756FA024, 2756FA031, 2756FA032) . . . . .		27-56-10

TO 1300i-2-27JG-60-1 FLIGHT  
CONTROLS SPOILERS  
(27-60-00 - 27-63-02)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Electrostatic discharge sensitive . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-60-00)

General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1

## 2. MAINTENANCE INSTRUCTIONS

Spoilers system operational checkout . . . . .	27-60-01
Spoilers system mechanical rigging . . . . .	27-60-02
Wing spoiler assembly (2761AA001 thru 2761AA008) . . . . .	27-61-10
Spoilers system repair . . . . .	27-63-02

TO 1300i-2-27JG-60-2  
FLIGHT CONTROLS SPOILERS  
(27-60-00 AND 27-63-10 - 27-64-10)

## INTRODUCTION

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Scope . . . . .		iii
Model(s) covered . . . . .		iii
Abbreviations . . . . .		iii
Electrostatic discharge sensitive . . . . .		iii
Change request . . . . .		iii
300i TO information . . . . .		iv
List of Time Compliance Technical Orders (TCTO) . .		v
 1. GENERAL INFORMATION (27-60-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-1
 2. MAINTENANCE INSTRUCTIONS		
Spoiler control/electronic flap computer (2763CM001, 2763CM002) . . . . .		27-63-10
Spoiler linear electro-hydraulic actuator (2764HP001 thru 2764HP008) . . . . .		27-64-10

TO 1300i-2-27JG-60-3  
FLIGHT CONTROLS SPOILERS  
(27-60-00 AND 27-64-11 - 27-65-10)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
 1. GENERAL INFORMATION (27-60-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1
 2. MAINTENANCE INSTRUCTIONS	

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
Spoiler actuator support crank assembly (2764MP001 thru 2764MP008) . . . . .		27-64-11
Spoiler/flap interconnect pushrod assembly (2764MP009 thru 2764MP016) . . . . .		27-64-12
Speed brake position indicator (2765MN001) . . .		27-65-10

TO 1300i-2-27JG-80-1  
FLIGHT CONTROLS SLATS  
(27-80-00 - 27-80-02)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-80-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1
2. MAINTENANCE INSTRUCTIONS	
Slats system operational checkout . . . . .	27-80-01
Primary slat actuation system bleed . . . . .	27-80-02

TO 1300i-2-27JG-80-2  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-80-03 - 27-81-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii



<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
300i TO information . . . . .		iii
List of Time Compliance Technical Orders (TCTO) . .		iv
1. GENERAL INFORMATION (27-80-00)		
General information . . . . .		1-1
General warnings, cautions, and notes . . . . .		1-2
2. MAINTENANCE INSTRUCTIONS		
Alternate slat actuation system bleed . . . . .	27-80-03	
Controls and surfaces system repair . . . . .	27-81-01	
Slat track assembly (2781AA010 thru 2781AA039) . . . . .	27-81-10	

TO 1300i-2-27JG-80-3  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-81-11)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-80-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-1
2. MAINTENANCE INSTRUCTIONS	
Slat assembly (2781AA002 thru 2781AA009) . .	27-81-11

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-80-4  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-81-11)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-80-00)

General information . . . . .	1-1
Eccentric bushing alignment . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-4

## 2. MAINTENANCE INSTRUCTIONS

Slat assembly (2781AA002 thru 2781AA009) . .	27-81-11
--	----------

TO 1300i-2-27JG-80-5  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-82-10 - 27-82-12)

## INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

## 1. GENERAL INFORMATION (27-80-00)

General information . . . . .	1-1
-------------------------------	-----

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN or PAGE</u>
	General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS		
	Slat control valve assembly (2782FV001) . . . . .	27-82-10
	Linear actuating cylinder assembly (2782HP001 thru 2782HP016) . . . . .	27-82-11
	Hydraulic lock valve assembly (2782FV002 thru 2782FV009) . . . . .	27-82-12

TO 1300i-2-27JG-80-6  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-82-13 - 27-84-10)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv

1. GENERAL INFORMATION (27-80-00)	
	General information . . . . . 1-1
	General warnings, cautions, and notes . . . . . 1-2
2. MAINTENANCE INSTRUCTIONS	
	Slat control valve drive electro-mechanical actuator (2782AA001) . . . . . 27-82-13
	Slat proximity sensor (2784AS001 thru 2784AS032) . . . . . 27-84-10

<u>SECTION</u>	<u>TO NO.</u>	<u>S/S/SN</u> <u>or PAGE</u>
----------------	---------------	---------------------------------

TO 1300i-2-27JG-80-7  
FLIGHT CONTROLS SLATS  
(27-80-00 AND 27-87-10 - 27-87-11)

INTRODUCTION

Scope . . . . .	iii
Model(s) covered . . . . .	iii
Abbreviations . . . . .	iii
Change request . . . . .	iii
300i TO information . . . . .	iii
List of Time Compliance Technical Orders (TCTO) . .	iv
1. GENERAL INFORMATION (27-80-00)	
General information . . . . .	1-1
General warnings, cautions, and notes . . . . .	1-2
2. MAINTENANCE INSTRUCTIONS	
Slat closeout door assembly (2787PA001 thru 2787PA030) . . . . .	27-87-10
Slat actuator door assembly (2787PA031 thru 2787PA042) . . . . .	27-87-11

# INTRODUCTION

## SCOPE.

This manual contains a complete table of contents for all flight control system job guides, system rigs, and spoiler control/electronic flap computer built-in test, and operational checkout, and EFCS/SCEFC fault list and history interrogation.

## MODEL(S) COVERED.

All

## ABBREVIATIONS.

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

EFCS A/R	Electronic Flight Control System Air Refueling
LS	Line Select
MFD	Multifunction Display
NVM	Non Volatile Memory
SCEFC	Spoiler Control Electronic Flap Computer

## CHANGE REQUEST.

Recommended changes to this manual shall be submitted in accordance with TO 00-5-1300i **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 (27-00-00)

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

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

1-5. All adhesive sealants, sealants, and compounds used in this manual are listed with a primary part number and/or primary specification number. Any suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds may be used unless otherwise specified. Suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds are listed in the system peculiar corrosion control manual (Refer to TO 1300i-23, Chapter 1, Section III).

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

#### NOTES.

#### **WARNING**

- Prior to applying or removing hydraulic power, personnel shall establish and maintain positive communications between flight deck and ground personnel. Failure to comply may cause flight control surfaces or thrust reverser movement and cause injury to personnel and damage to aircraft.

**WARNING** - Continued

- Prior to applying or removing hydraulic power, all flight control surfaces and thrust reversers shall be cleared of equipment and personnel. Failure to comply may cause injury to personnel and damage to aircraft.
- Flight control surfaces and thrust reversers shall be cleared prior to turning off hydraulic pumps from the loadmaster control panels. Failure to comply may cause injury to personnel and damage to aircraft.
- Prior to pressing **EFCS RESET** button, all flight control surfaces shall be clear of personnel and equipment. Failure to comply may cause injury to personnel and damage to aircraft.

**CAUTION**

When hydraulic lines or components have been removed, the affected system shall be bled using hydraulic system bleed procedures in accordance with (12-29-08). Failure to comply may cause damage to aircraft.

**NOTE**

The roll control stick may have a stiff feel within the last one inch of left wing down stick deflection that is not felt in the right wing down direction.



SECTION 2

FLIGHT CONTROLS SYSTEM MAJOR RIG  
(27-00-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

- 01-1. Flap major rig.
- 01-2. Spoiler major rig.

	Task
<b>NOTE</b>	
This is a typical major rig task for spoiler actuator, flap actuator cylinders, and spoiler control/electronic flap computers (SCEFC).	All

Additional data:

	Task
TO 1300i-2-00JG-00-1	01-2
TO 1300i-2-23JG-40-1	All
TO 1300i-2-23JG-50-1	All
TO 1300i-2-27JG-50-1	All
TO 1300i-2-29JG-20-1	01-1
TO 1300i-2-34JG-60-1	All

Personnel recommended:

	Task
Two	All

**Task**

Person (A) performs task.

Person (B) assists person (A).

**Safety conditions:**

**Task**

**WARNING**

- Rig may be aborted at any time by pressing 6L Line Select (LS) key, however, the affected surface may continue to move. All flight control surfaces are to be clear before operating. Failure to comply may cause injury to personnel or damage to equipment.

All
- When a rig is aborted for any reason, by any means, the aborted rig procedure shall be repeated, even if it is no longer indicated as required on the surface selection menu. When the abort occurs during the update of the rig parameters in Non Volatile Memory (NVM), it is possible that some, but not all, NVM rig data/pages have been modified. This may lead to a completely misrigged surface, even when otherwise indicated. Failure to comply may cause injury to personnel or damage to equipment.

All

## Support equipment:

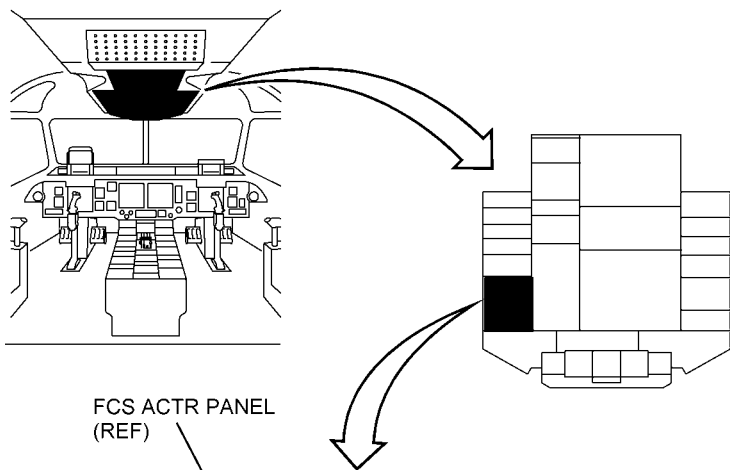
<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Clinometer	TB107	--	1	All
Protractor, Pro 360 Digital or Equivalent	J-38460-A	(Full 360° circle range)	1	All

## Supplies:

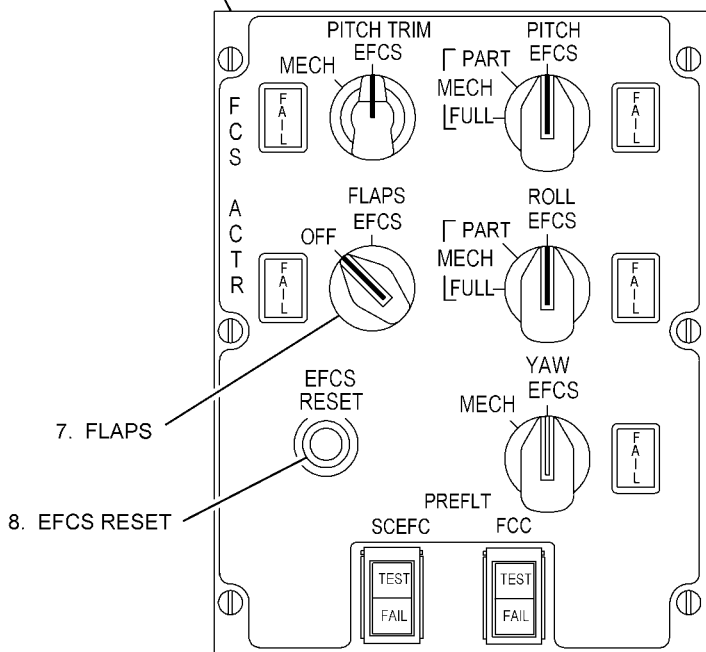
<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
NA	--	--	--	--

## 01-1. FLAP MAJOR RIG.

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).
4. Perform flight interphone operation (23-51-02, tasks 02-1 and 02-2).
5. Operate mission computing system (34-62-02, tasks 02-1 and 02-2).
6. Operate auxiliary hydraulic system (29-20-01, task 01-1).
7. (A) Rotate **FLAPS** switch on **FCS ACTR** panel to **EFCS**.
8. (A) Press **EFCS** reset button.
9. Position flap/slat handle to **UP/RET** position (27-50-03, task 03-1).



FCS ACTR PANEL  
(REF)



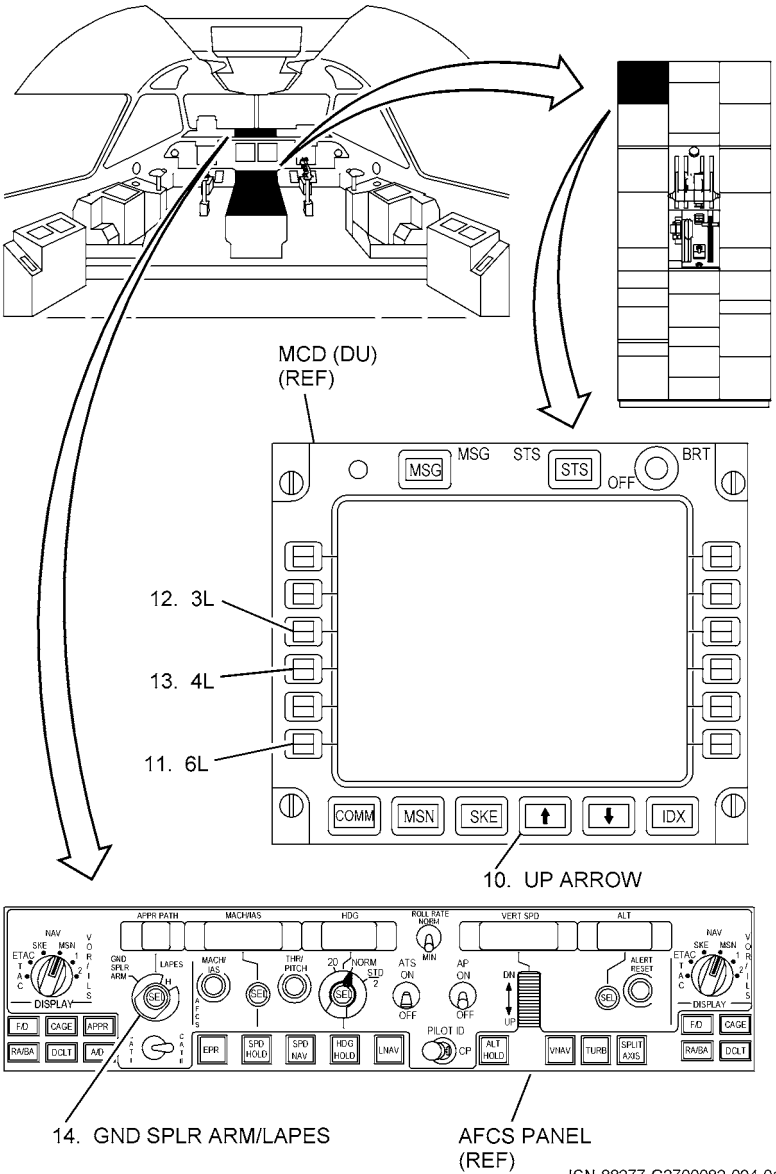
ICN-88277-G2700071-005-01

10. (A) Press up arrow key on **MCD (DU)**.
  - **MSN INDEX 2** is displayed.
11. (A) Press 6L Line Select (LS) key.
  - **MAINT MENU** is displayed.
12. (A) Press 3L LS key.
  - **SCEFC MAINT MENU** is displayed.

**NOTE**

A fault list and history of each Line Replaceable Unit (LRU) can be accessed from **SCEFC MAINT MENU** page by pressing 1L or 2L LS key.

13. (A) Press 4L LS key.
  - **SCEFC RIG MENU** is displayed.
14. (A) Set **GND SPLR ARM/LAPES** switch on **AFCS** panel to **OFF** then **ARM** as commanded by **MCD (DU)** display.
  - **SCEFC RIG PAGE 1/2** is displayed.

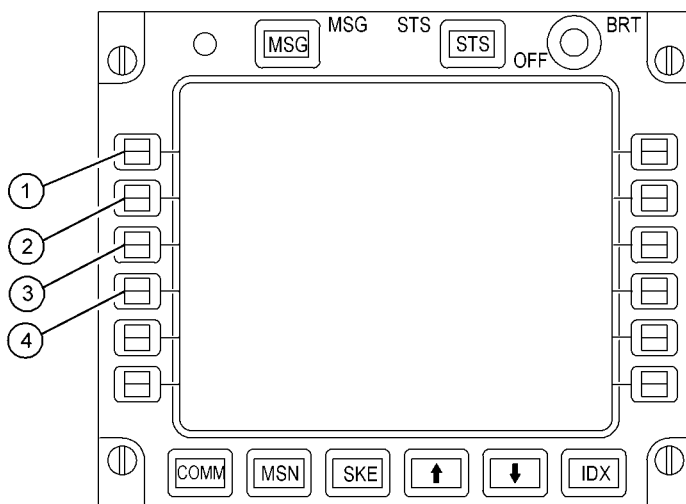


ICN-88277-G2700082-004-01

15. (A) Select surface to be rigged and press LS key.

- **SCEFC RIG SELECT LRUS REPLACED** is displayed.





15. —

SURFACE	INDEX NO.	MNEMONIC	LS KEY
LEFT OUTBOARD FLAP	1	FPA 1	1L
LEFT INBOARD FLAP	2	FPA 2	2L
RIGHT INBOARD FLAP	3	FPA 3	3L
RIGHT OUTBOARD FLAP	4	FPA 4	4L

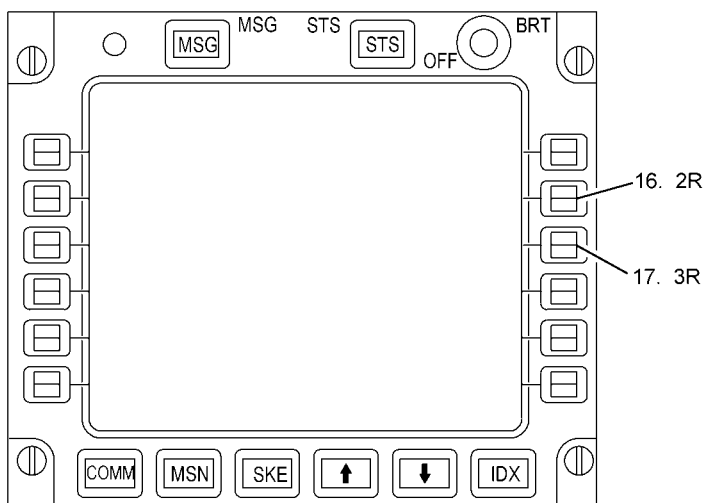
ICN-88277-G2700083-004-01

## TO 1300i-2-27JG-00-1

16. (A) Press 2R LS key.

17. (A) Press 3R LS keys.

- **MAN SEL** is displayed under applicable LRU.
- **CONT** is displayed on line 6L.



ICN-88277-G2700085-004-01

18. (A) Press 6L LS key.

- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **CALIBRATE PROTRACTOR** is displayed.

### NOTE

Protractor shall be placed at the same location on flight control surface throughout the process.

19. (B) Calibrate protractor on appropriate flap assembly to obtain reference point.

### WARNING

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

20. (A) Press 6R LS key.

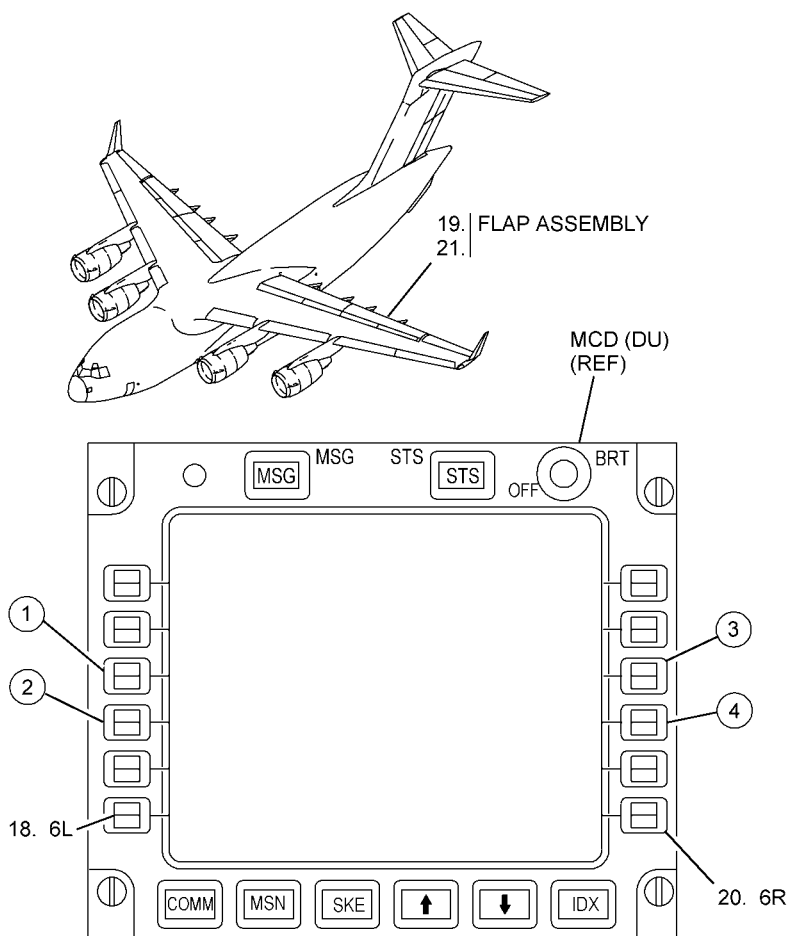
- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **MAJOR RIG TO +23.0 DEGREES** is displayed.

21. (B) Measure angle of flap assembly surface throw.

### NOTE

Appropriate LS key must be pressed to step surface to required angle. Multiple selections of the appropriate LS key may be required to move the surface a fraction of a degree.

22. (A,B) Press LS key until flap assembly surface throw is 22.5° to 23.5°.



22. —

STEP	INDEX NO.	LS KEY
UP 10	1	3L
DN 10	2	4L
UP 1	3	3R
DN 1	4	4R

(TYPICAL)

ICN-88277-G2700086-003-01

**WARNING**

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

23. (A) Press 6R LS key.

- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **MAJOR RIG TO +39.0 DEGREES** is displayed.

**NOTE**

Appropriate LS key must be pressed to step surface to required angle. Multiple selections of the appropriate LS key may be required to move the surface a fraction of a degree.

24. (B) Measure angle of flap assembly surface throw.

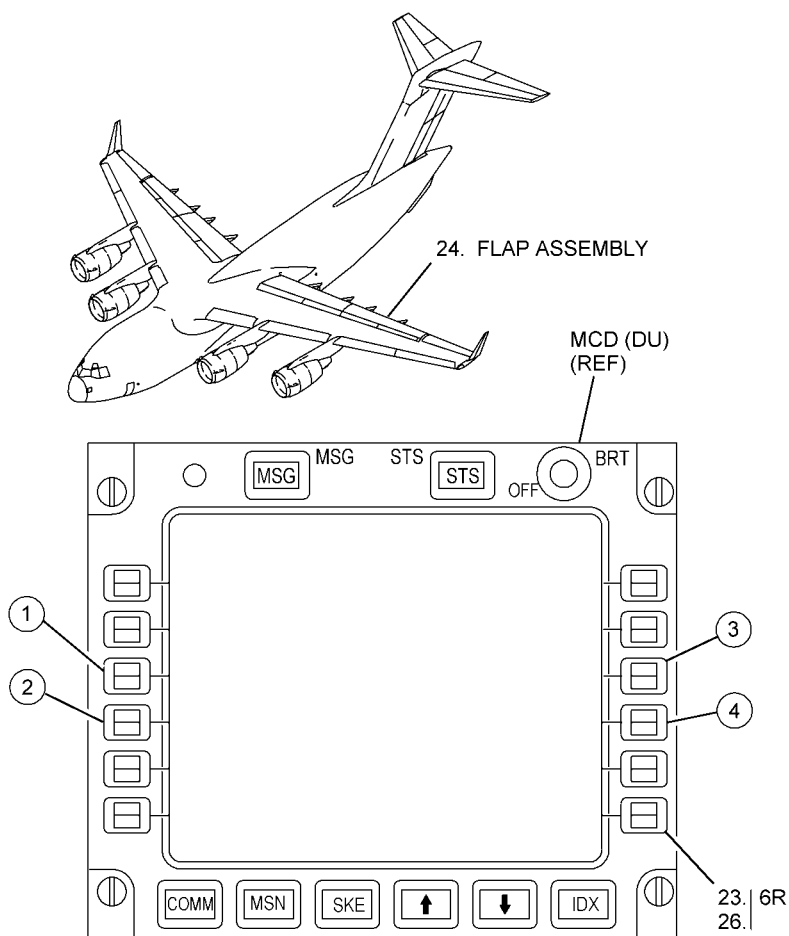
25. (A,B) Press LS key until flap assembly surface throw is 38.5° to 39.5°.

**WARNING**

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

26. (A) Press 6R LS key.

- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **MAJOR RIG TO +2.0 DEGREES** is displayed.



25. —

STEP	INDEX NO.	LS KEY
UP 10	1	3L
DN 10	2	4L
UP 1	3	3R
DN 1	4	4R

(TYPICAL)

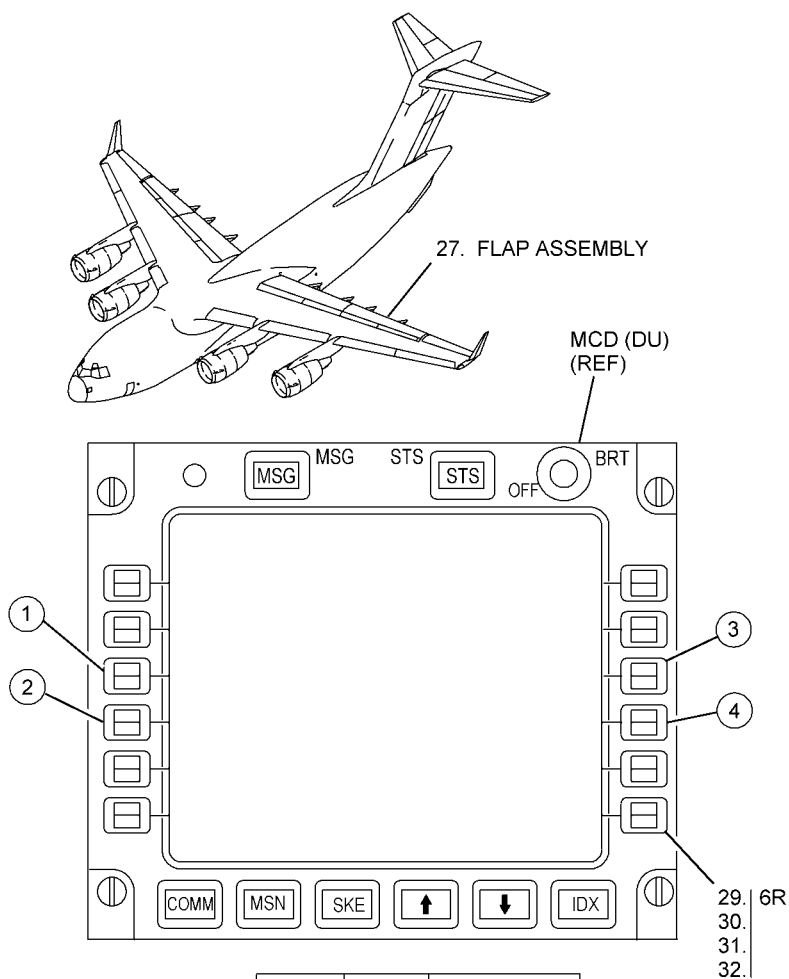
ICN-88277-G2700076-005-01

## NOTE

Appropriate LS key must be pressed to step surface to required angle. Multiple selections of the appropriate LS key may be required to move the surface a fraction of a degree.

27. (B) Measure angle of flap assembly surface throw.
28. (A,B) Press LS key until flap assembly surface throw is 1.5° to 2.5°.
29. (A) Press 6R LS key.
  - **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
  - **SCEFC RIG NVM UPDATE** is displayed.
  - **SCEFC RIG PAGE 1/2** is displayed.
30. (A) Press 6R LS key.
  - **SCEFC MAINT MENU** is displayed.
31. (A) Press 6R LS key.
  - **MAINT MENU** is displayed.
32. (A) Press 6R LS key.
  - **MSN INDEX 2** is displayed.





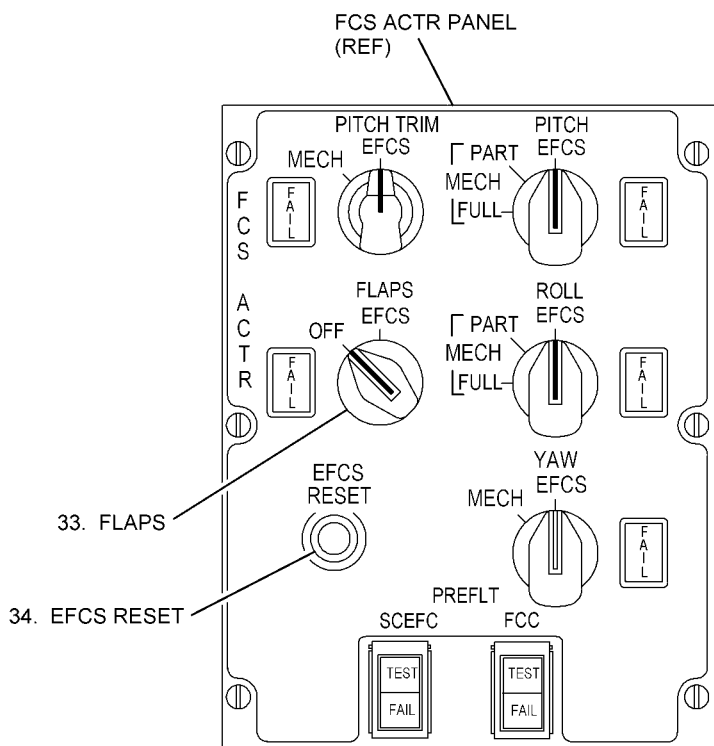
STEP	INDEX NO.	LS KEY
UP 10	1	3L
DN 10	2	4L
UP 1	3	3R
DN 1	4	4R

(TYPICAL)

ICN-88277-G2700099-003-01

## **TO 1300i-2-27JG-00-1**

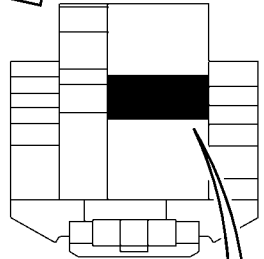
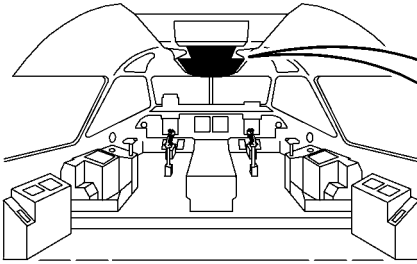
- 33. (A) Set **FLAPS** switch on **FCS ACTR** panel to **OFF**.
- 34. (A) Press **EFCS RESET** button.
- 35. Shutdown auxiliary hydraulic system (29-20-01, task 01-2).
- 36. Shutdown mission computing system (34-62-02, task 02-3).
- 37. Perform maintenance interphone shutdown (23-41-02, task 02-4).
- 38. Perform flight interphone shutdown (23-51-02, task 02-3).



ICN-88277-G2700084-006-01

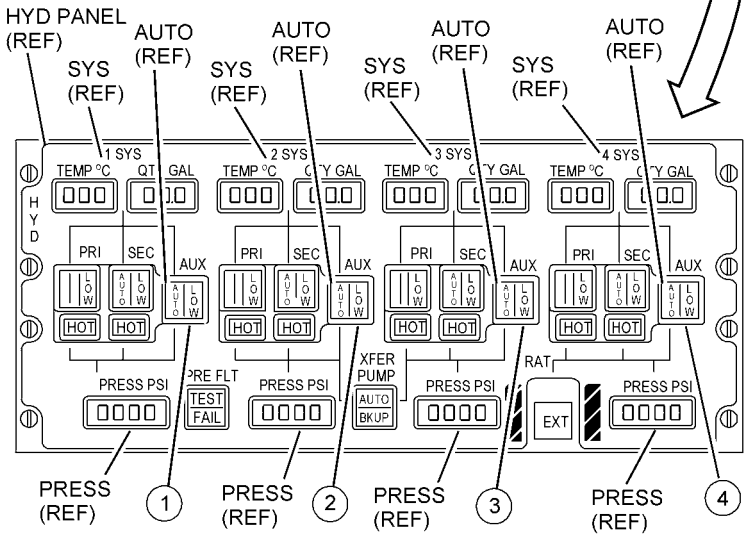
## 01-2. SPOILER MAJOR RIG.

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).
4. Perform flight interphone operation (23-51-02, tasks 02-1 and 02-2).
5. Operate mission computing system (34-62-02, tasks 02-1 and 02-2).
6. Operate flaps system and position flap/slat handle to **UP/RET** (27-50-03, task 03-1).
7. (A) Press **SYS, AUX** switchlight, on **HYD** panel.
  - **AUTO** light comes on.
  - **PRESS PSI** indicator reads 3800-4200.



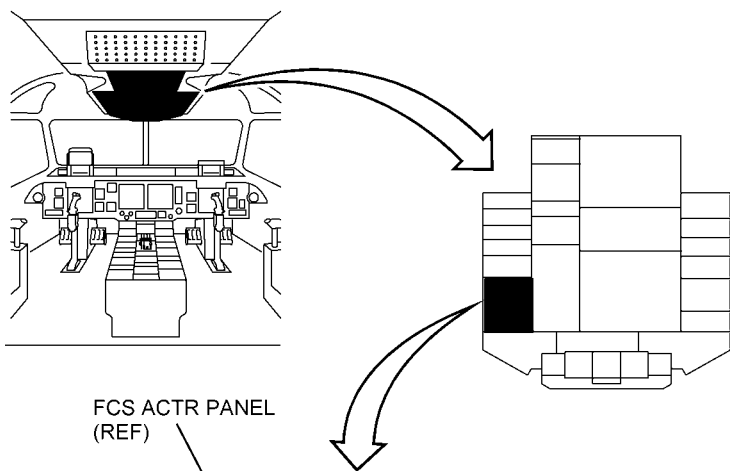
7.

ACTUATOR REF DES	SPA_X	INDEX NO.	HYD SYS
2764HP006	SPA_3	1	1
2764HP008	SPA_1		
2764HP001	SPA_5	2	2
2764HP007	SPA_2		
2764HP003	SPA_7	3	3
2764HP005	SPA_4		
2764HP002	SPA_6	4	4
2764HP004	SPA_8		

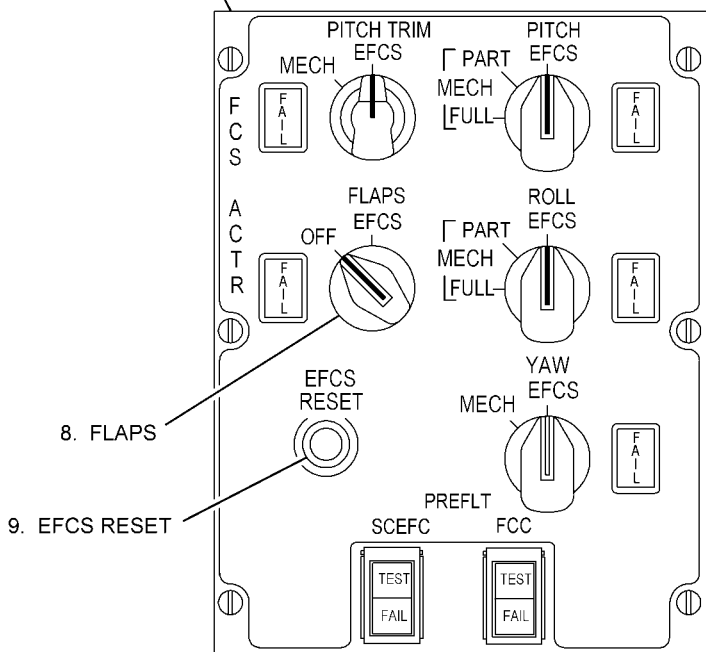


ICN-88277-G2700072-004-01

8. (A) Rotate **FLAPS** switch on **FCS ACTR** panel to **EFCS**.
9. (A) Press **EFCS** reset button.



FCS ACTR PANEL  
(REF)



ICN-88277-G2700073-005-01

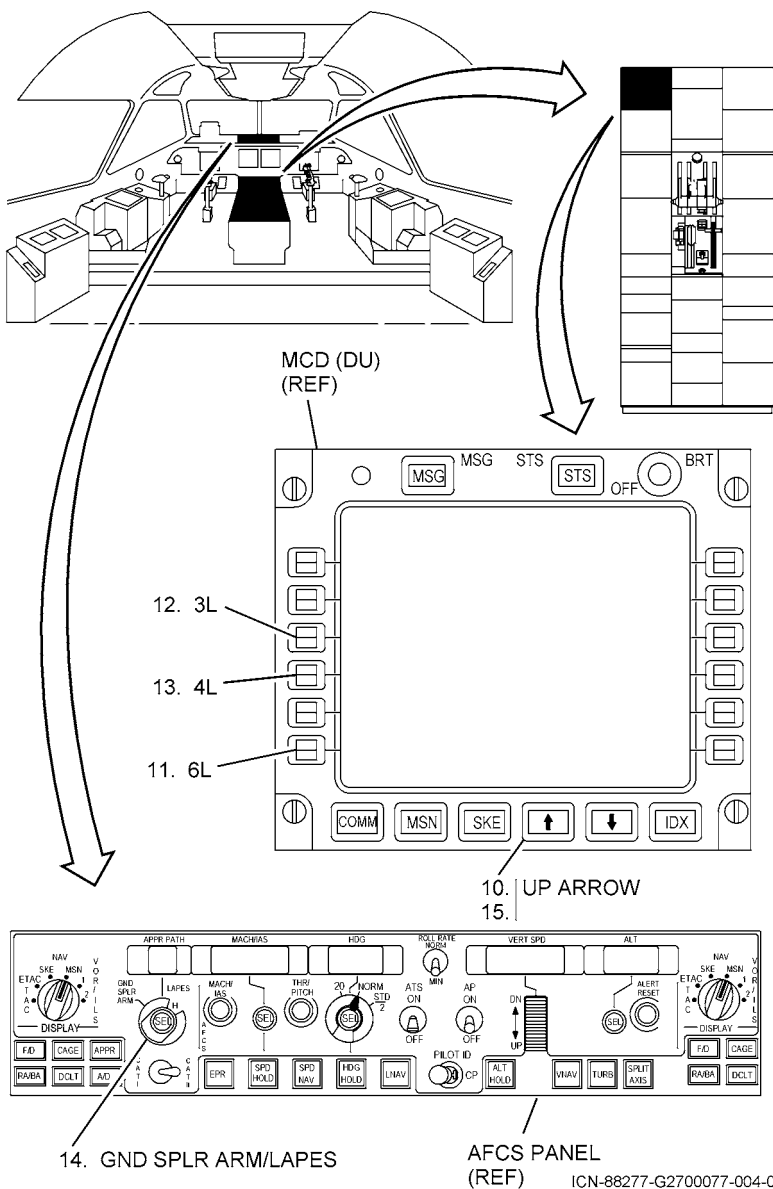
10. (A) Press up arrow key on **MCD (DU)**.
  - **MSN INDEX 2** is displayed.
11. (A) Press 6L Line Select (LS) key.
  - **MAINT MENU** is displayed.
12. (A) Press 3L LS key.
  - **SCEFC MAINT MENU** is displayed.

**NOTE**

A fault list and history of each Line Replaceable Unit (LRU) can be accessed from **SCEFC MAINT MENU** page by pressing 1L or 2L LS key.

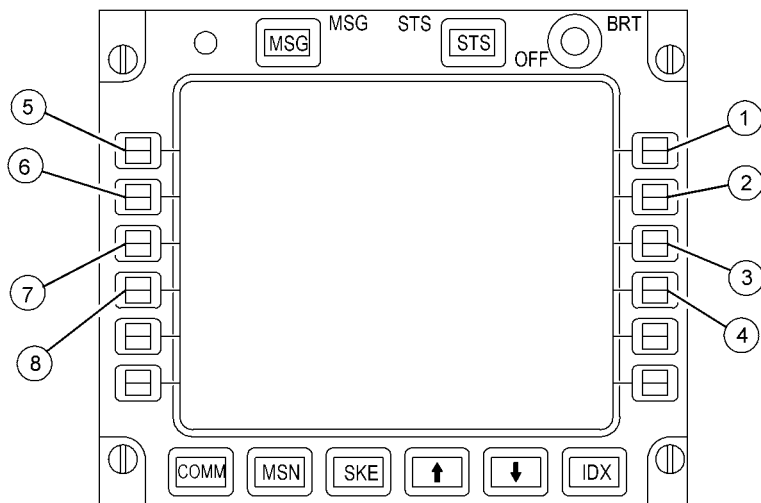
13. (A) Press 4L LS key.
  - **SCEFC RIG MENU** is displayed.
14. (A) Set **GND SPLR ARM/LAPES** switch on **AFCS** panel to **OFF** then **ARM** as commanded by **MCD (DU)** display.
  - **SCEFC RIG PAGE 1/2** is displayed.
15. (A) Press up arrow key.
  - **SCEFC RIG PAGE 2/2** is displayed.





16. (A) Select surface that requires rig and press LS key.

- **SCEFC RIG SELECT LRUS REPLACED** is displayed.



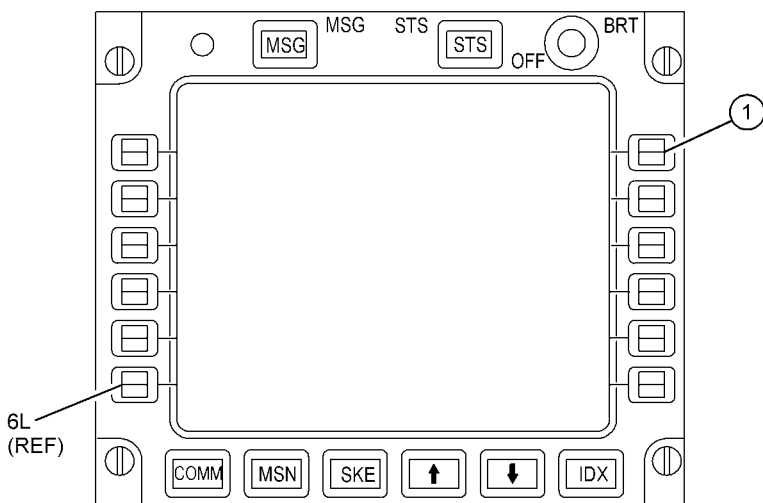
16. —

SPOILER ACTUATOR REF DES	INDEX NO.	LINE LS KEY
2764HP001	1	1R
2764HP002	2	2R
2764HP003	3	3R
2764HP004	4	4R
2764HP005	5	1L
2764HP007	6	2L
2764HP006	7	3L
2764HP008	8	4L

ICN-88277-G2700078-004-01

17. (A) Select LRU and press LS key as follows:

- **MAN SEL** is displayed under appropriate LRU.
- **CONT** is displayed on line 6L.



17.	SPOILER LOCATION	INDEX NO.	MNEMONIC	LS KEY
	LEFT INBOARD	1	SPA 4	1R
	LEFT MIDDLE INBOARD		SPA 3	
	LEFT MIDDLE OUTBOARD		SPA 2	
	LEFT OUTBOARD		SPA 1	
	RIGHT INBOARD		SPA 5	
	RIGHT MIDDLE INBOARD		SPA 6	
	RIGHT MIDDLE OUTBOARD		SPA 7	
	RIGHT OUTBOARD		SPA 8	

ICN-88277-G2700081-004-01

**WARNING**

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

18. (A) Press 6L LS key.

- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **CALIBRATE PROTRACTOR** is displayed.

19. Enter fuselage and wing (00-00-01).

**NOTE**

Protractor shall be placed at the same location on flight control surface throughout the process.

20. (B) Calibrate protractor on appropriate spoiler assembly to obtain reference point.

**WARNING**

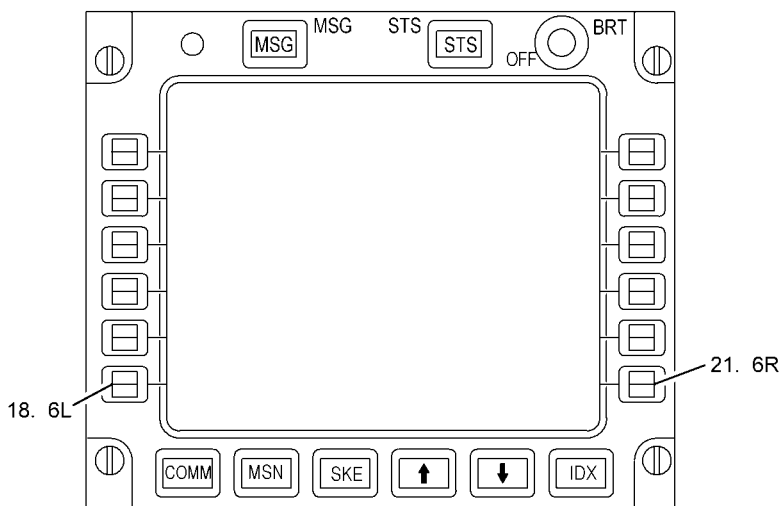
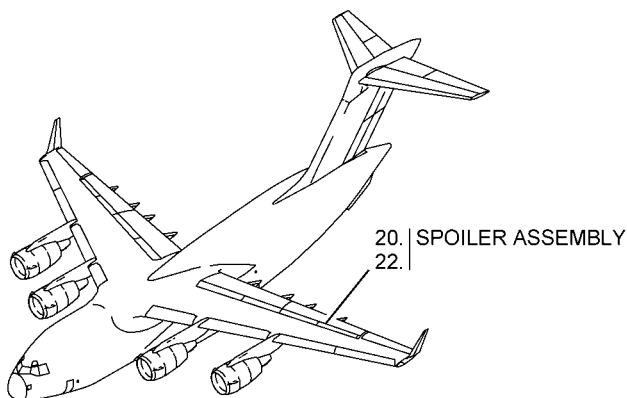
All flight control surfaces shall be clear of personnel and equipment prior to movement. Failure to comply may cause injury to personnel or damage to aircraft.

21. (A) Press 6R LS key.

- **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
- **MAJOR RIG TO -5.0 DEGREES** is displayed.

22. (B) Measure angle of spoiler assembly surface throw.

- The angle is between  $-3^{\circ}$  to  $-7^{\circ}$ .



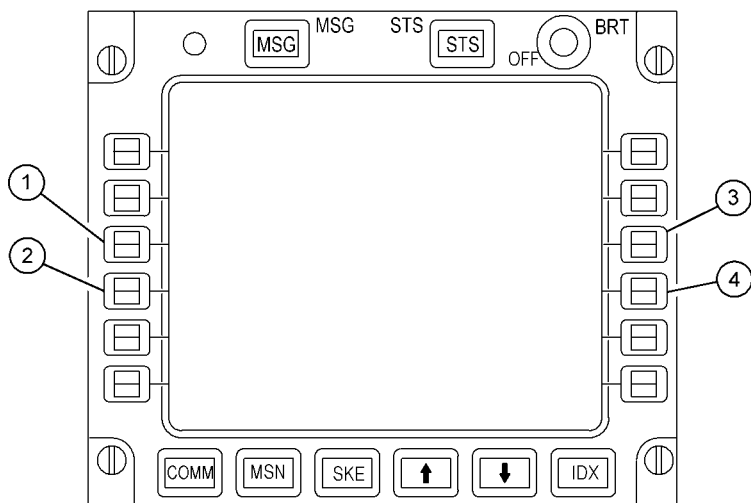
ICN-88277-G2700080-003-01

**NOTE**

Appropriate LS key must be pressed to step surface to required angle. Multiple selections of the appropriate LS key may be required to move the surface a fraction of a degree.

23. (A,B) Press LS key until spoiler surface throw is  $-4.8^{\circ}$  to  $-5.2^{\circ}$ .





23. —

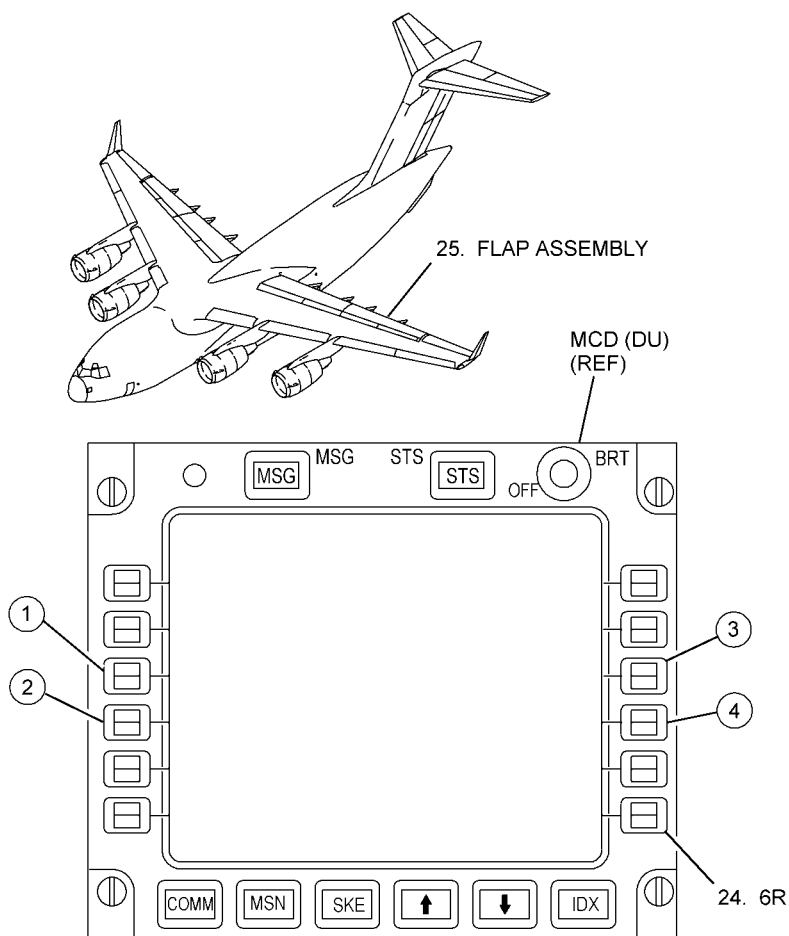
STEP	INDEX NO.	LS KEY
UP 10	1	3L
DN 10	2	4L
UP 1	3	3R
DN 1	4	4R

24. (A) Press 6R LS key.
- **SCEFC SPA RIG** is displayed.
  - **MAJOR RIG TO -54.0 DEGREES** is displayed.
25. (B) Measure angle of spoiler assembly surface throw.
- The angle is between  $-52^{\circ}$  to  $-56^{\circ}$ .

**NOTE**

Appropriate LS key must be pressed to step surface to required angle. Multiple selections of the appropriate LS key may be required to move the surface a fraction of a degree.

26. (A,B) Press appropriate LS key until spoiler assembly surface throw is  $-53.7^{\circ}$  to  $-54.7^{\circ}$ .



26. —

STEP	INDEX NO.	LS KEY
UP 10	1	3L
DN 10	2	4L
UP 1	3	3R
DN 1	4	4R

(TYPICAL)

ICN-88277-G2700079-004-01

27. Exit fuselage and wing (00-00-01).

**WARNING**

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

28. (A) Press 6R LS key.

- **SCEFC RIG XXX\_X** is displayed.
- **SCEFC RIG NVM UPDATE** is displayed.
- **SCEFC RIG PAGE 1/2** is displayed.

29. (A) Press 6R LS key.

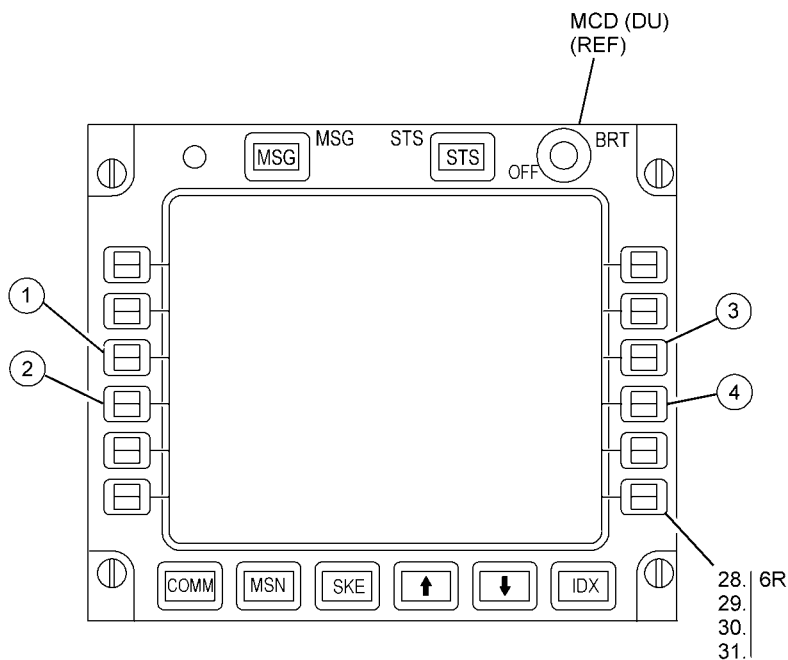
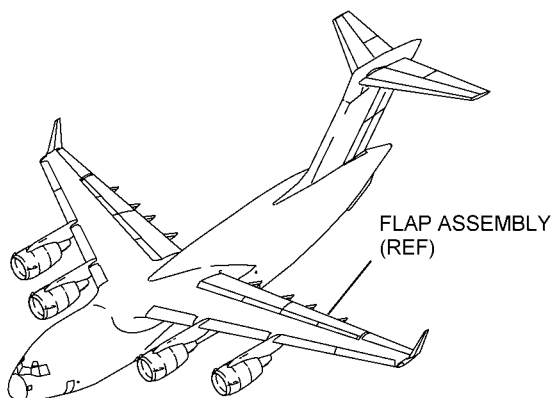
- **SCEFC MAINT MENU** is displayed.

30. (A) Press 6R LS key.

- **MAINT MENU** is displayed.

31. (A) Press 6R LS key.

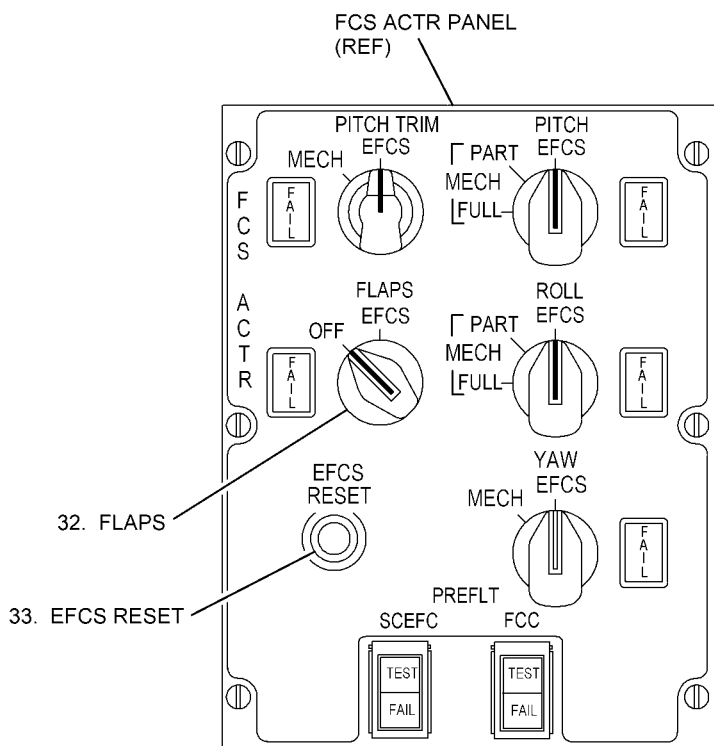
- **MSN INDEX 2** is displayed.



(TYPICAL)

ICN-88277-G2700109-001-01

32. (A) Set **FLAPS** switch on **FCS ACTR** panel to **OFF**.
33. (A) Press **EFCS RESET** button.

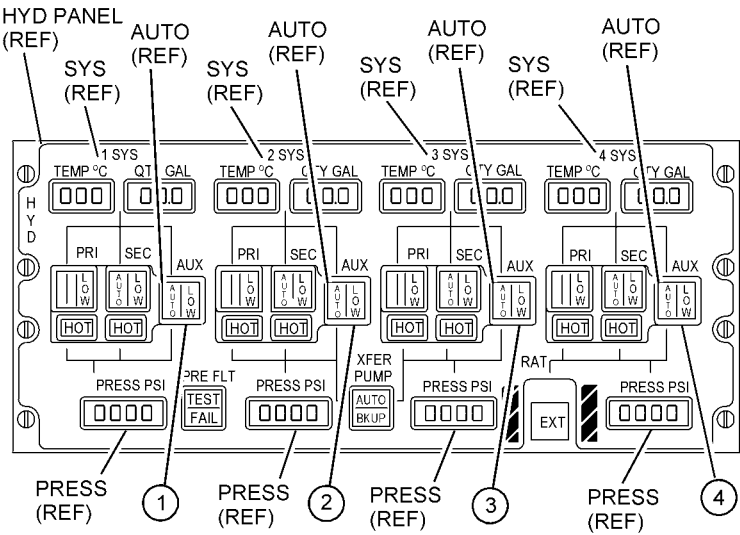


ICN-88277-G2700074-005-01

## TO 1300i-2-27JG-00-1

34. (A) Press **SYS**, **AUX** switchlight, on **HYD** panel.
  - **AUTO** light goes off.
  - **PRESS PSI** indicator reads 0.
35. Shutdown mission computing system (34-62-02, task 02-3).
36. Perform maintenance interphone shutdown (23-41-02, task 02-4).
37. Perform flight interphone shutdown (23-51-02, task 02-3).





34.

ACTUATOR REF DES	SPA_X	INDEX NO.	HYD SYS
2764HP006	SPA_3	1	1
2764HP008	SPA_1		
2764HP001	SPA_5	2	2
2764HP007	SPA_2		
2764HP003	SPA_7	3	3
2764HP005	SPA_4		
2764HP002	SPA_6	4	4
2764HP004	SPA_8		



# FLIGHT CONTROLS SYSTEM MINOR RIG (27-00-02)

## GENERAL MAINTENANCE INPUT CONDITIONS:

### Applicability:

All

### Task

All

### Additional information:

This procedure consists of the following tasks:

02-1. Preparation.

02-2. Flight control system minor rig flaps.

### NOTE

This is a typical minor rig task for all flight control system components.

### Task

All

### Additional data:

TO 1300i-2-23JG-40-1

TO 1300i-2-23JG-50-1

TO 1300i-2-27JG-50-1

TO 1300i-2-29JG-20-1

TO 1300i-2-34JG-60-1

### Task

All

All

02-1

02-1

All

### Personnel recommended:

Two

Person (A) performs task.

Person (B) ground observer.

### Task

All

**Safety conditions:**

**Task**



- Rig may be aborted at any time by pressing 6L Line Select (LS) key, however, the affected surface may continue to move. Failure to comply may cause damage to aircraft. All
- If a rig is aborted for any reason, by any means, the aborted rig procedure must be repeated, even if it is no longer indicated as required on the surface selection menu. If the abort occurred during the update of the rig parameters in Non Volatile Memory (NVM), it is possible that some, but not all, NVM rig data/pages have been modified. This could lead to a completely misrigged surface, even when otherwise indicated. Failure to comply may cause damage to aircraft. All

### Support equipment:

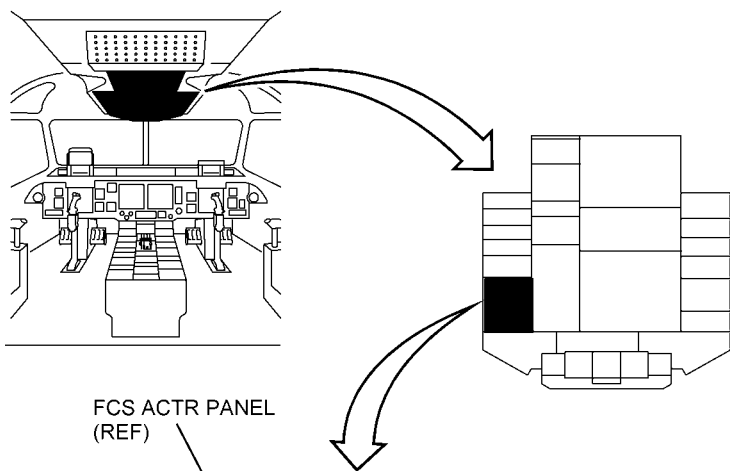
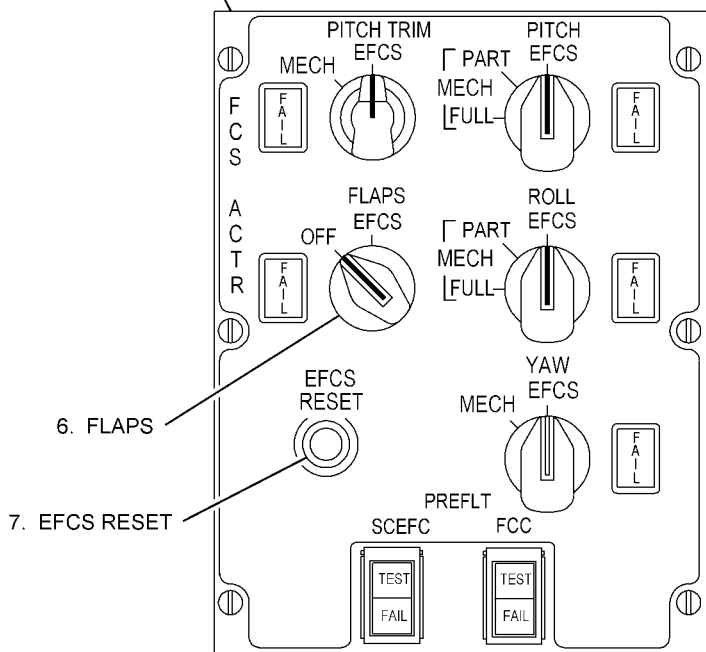
<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
NA	--	--	--	--

### Supplies:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
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).
4. Perform flight interphone operation (23-51-02, tasks 02-1 and 02-2).
5. Operate auxiliary hydraulic system (29-20-01, task 01-1).
6. (A) Set **FLAPS** switch on **FCS ACTR** panel to **EFCS**.
7. (A) Press **EFCS RESET** button.
8. Operate flaps system and position flap/slat handle to **UP/RET** (27-50-03, task 03-1).

FCS ACTR PANEL  
(REF)

ICN-88277-G2700036-008-01

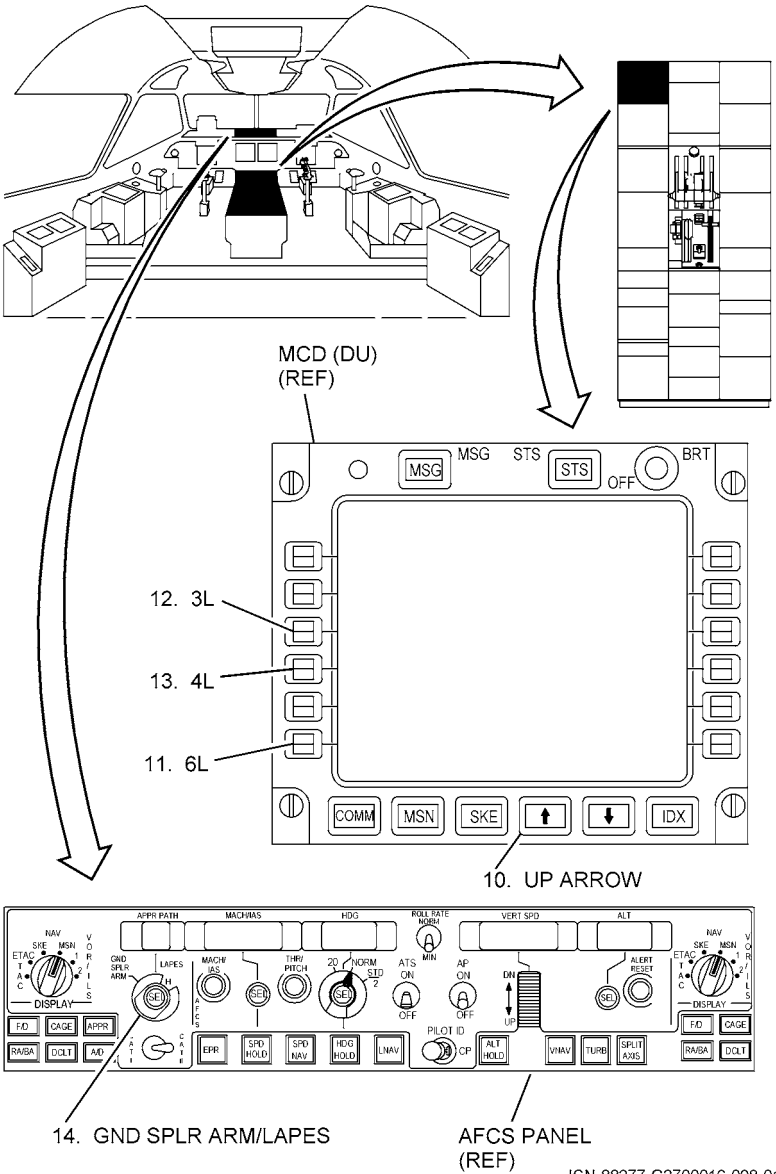
9. Operate mission computing system (34-62-02, tasks 02-1 and 02-2).
10. (A) Press up arrow key on **MCD (DU)**.
  - **MSN INDEX 2** is displayed.
11. (A) Press 6L Line Select (LS) key.
  - **MAINT MENU** is displayed.
12. (A) Press 3L LS key.
  - **SCEFC MAINT MENU** is displayed.

**NOTE**

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

13. (A) Press 4L LS key.
  - **SCEFC RIG MENU** is displayed.
14. (A,B) Set **GND SPLR ARM/LAPES** switch on **AFCS** panel to the vertical/off position then **ARM** as commanded by display.
  - **SCEFC RIG PAGE 1/2** is displayed.

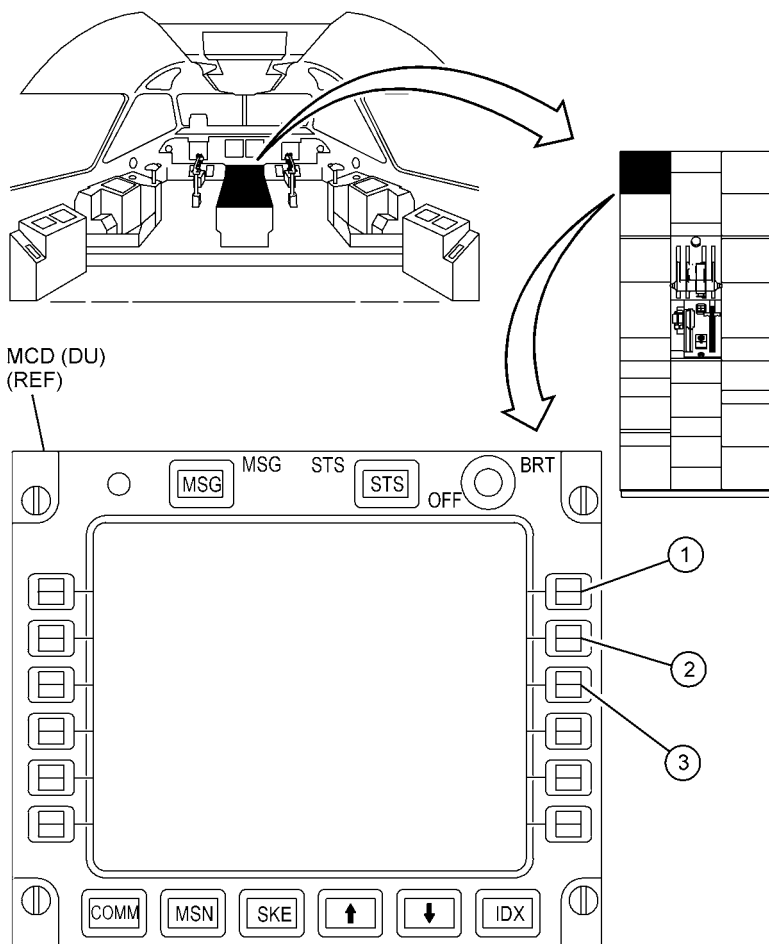




ICN-88277-G2700016-008-01

## 02-2. FLIGHT CONTROL SYSTEM MINOR RIG FLAPS.

1. (A) Select surface to be rigged and press appropriate Line Select (LS) key.
  - **SCEFC RIG SELECT LRUS REPLACED** menu is displayed on **MCD (DU)**.
2. (A) Select line replaceable unit that was replaced and press appropriate LS key.



1.	LRU	INDEX NO.	MNEMONIC	LS KEY
2.	FLAP TANDEM CONTROL VALVE 1, 2, 3, 4	1	FPA_X	1R
	FLAP ACTUATING CYLINDER 1, 3, 5, 7	2	FPC_X	2R
	FLAP ACTUATING CYLINDER 2, 4, 6, 8	3	FPC_X	3R

ICN-88277-G2700066-003-01

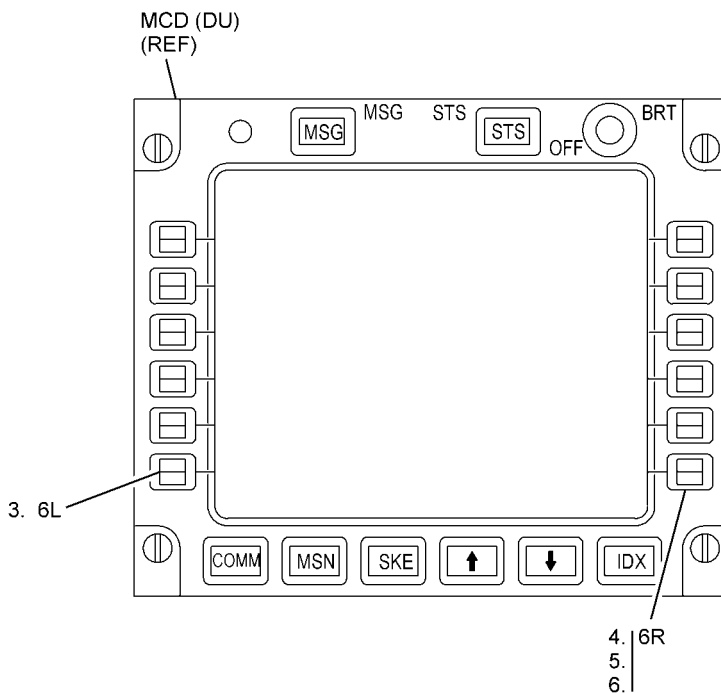
**WARNING**

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

**CAUTION**

Rig may be aborted at any time by pressing 6L LS key, however, the affected surface may continue to move. Failure to comply may cause damage to aircraft.

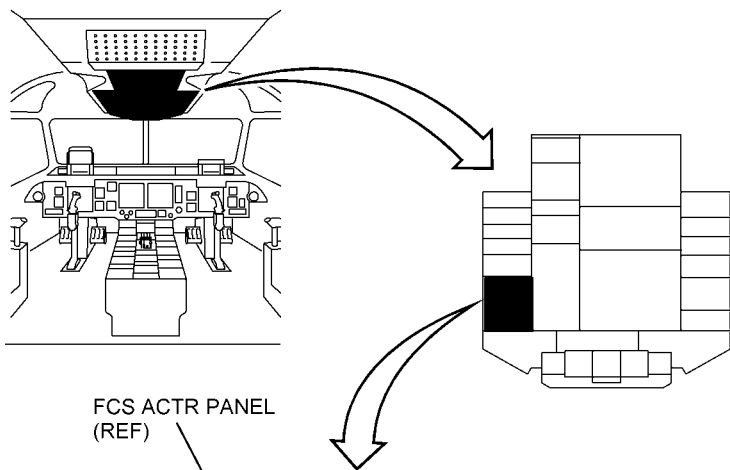
3. (A) Press 6L LS key.
  - **SCEFC RIG XXX\_X IN PROGRESS** is displayed.
  - **SCEFC RIG NVM UPDATE IN PROGRESS** is displayed.
4. (A) Press 6R LS key.
  - **SCEFC MAINT MENU** is displayed.
5. (A) Press 6R LS key.
  - **MAINTENANCE MENU** is displayed.
6. (A) Press 6R LS key.
  - **MSN INDEX 2** is displayed.
7. Shutdown mission computing system (34-62-02, task 02-3).



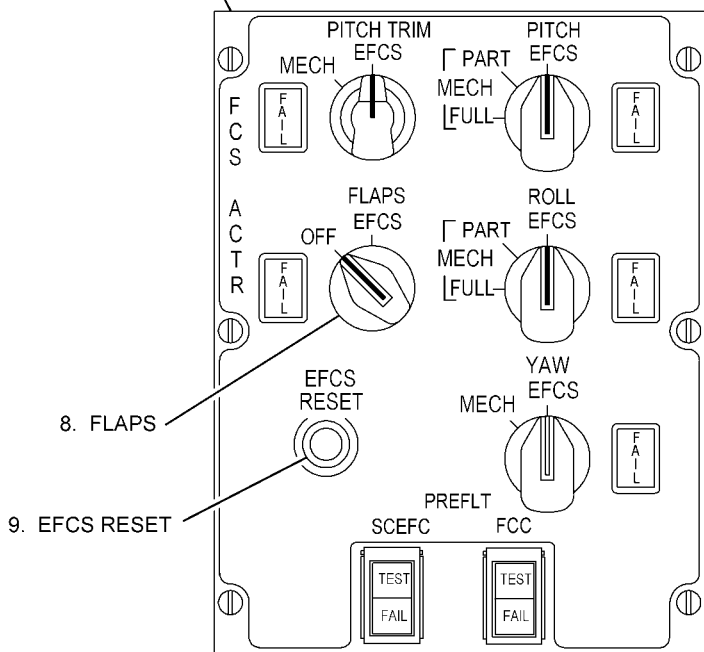
ICN-88277-G2700067-003-01

## **TO 1300i-2-27JG-00-1**

8. (A) Set **FLAPS** switch on **FCS ACTR** panel to **OFF**.
9. (A) Press **EFCS RESET** button on **FCS ACTR** panel.
10. Perform maintenance interphone shutdown (23-41-02, task 02-4).
11. Perform flight interphone shutdown (23-51-02, task 02-3).



FCS ACTR PANEL  
(REF)



ICN-88277-G2700070-005-01





**SPOILER CONTROL/ELECTRONIC FLAP  
COMPUTER PREFLIGHT BUILT-IN TEST  
(27-00-03)**

**GENERAL MAINTENANCE INPUT CONDITIONS:**

<b>Applicability:</b>	<b>Task</b>
All	All

**Additional information:**

This procedure consists of the following task:

- 03-1. Spoiler control/electronic flap computer preflight BIT.

<b>Additional data:</b>	<b>Task</b>
TO 1300i-2-29JG-20-1	All
TO 1300i-2-31JG-60-1	All

<b>Personnel recommended:</b>	<b>Task</b>
Two	All
Person (A) performs task.	
Person (B) ground observer.	

<b>Safety conditions:</b>	<b>Task</b>
---------------------------	-------------



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.

03-1

Support equipment:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
NA	--	--	--	--

Supplies:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
NA	--	--	--	--



## 03-1. SPOILER CONTROL/ELECTRONIC FLAP COMPUTER PREFLIGHT BIT.

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.
- 2A. Perform maintenance interphone operation (23-41-02, task 02-3).
- 2B. Perform flight interphone operation (23-51-02, tasks 02-1 and 02-2).
3. Operate auxiliary hydraulic system (29-20-01, task 01-1).
4. Operate MultiFunction Display (MFD) system and select **CFG** format (31-61-02, task 02-1 or 02-2).
5. Set **1 IRU** switch on **IRU** panel to **ON**.
6. Set **2 IRU** switch to **ON**.
7. Set **3 IRU** switch to **ON**.
8. Set **4 IRU** switch to **ON**.