FLAPS - ELECTRICAL/ELECTRONIC COMPONENTS - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to activate and deactivate the flap electrical/electronic components.

B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
27-53-00-040-801-A	FLAP ELECTRICAL/ELECTRONIC DEACTIVATION PROCEDURE	ALL
27-53-00-440-801-A	FLAP ELECTRICAL/ELECTRONIC REACTIVATION PROCEDURE	ALL

TASK 27-53-00-040-801-A
EFFECTIVITY: ALL

2. FLAP ELECTRICAL/ELECTRONIC DEACTIVATION PROCEDURE

A. General

(1) This task gives the procedures to deactivate the flap electrical/electronic components.

(2) This task refers to item 27-53-00 - Flap channels of the DDPM.

(3) The aircraft may be dispatched with one channel of the flap system inoperative provided:

- There are no obstacles in the take-off flight path above the level-off weight.
- Motor and brakes of failed channel are deactivated.

NOTE: If only one failure signal, generated by any of the two channels, indicates that the flap system has failed, the FLAP LOW SPEED advisory message will be displayed on the EICAS. As a result of this failure, the flap system will operate at half its normal speed while the message is shown.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 45-45-00-970-802-A/200	CMC DOWNLOADING WITH THE PERSONAL COMPUTER
S.B. 145-27-0020	-
SWPM 20-21-00	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
193	193 AL	Rear wing-to-fuselage fairing
197	197DR	Rear wing-to-fuselage fairing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Rear wing-to-fuselage fairing

I. Preparation

SUBTASK 841-002-A

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.

(1) Make sure that the aircraft is safe for maintenance.

(2) Remove these access panels:

- 193 AL
- 197DR (Applicable only to ERJ -145XR aircraft models).

J. Deactivation

SUBTASK 040-002-A

(1) Do the procedures that follow to identify the failed channel:

- On the circuit breaker panel, close the Flap 1 circuit breaker.
- On the circuit breaker panel, open the Flap 2 circuit breaker.
- Look at the EICAS. If the FLAP LOW SPEED message changes to FLAP FAIL, flap channel 1 is failed. If the FLAP LOW SPEED message stays in view, flap channel 2 is failed.
- Close Flap 2 CB.

(2) Do a CMC download (AMM TASK 45-45-00-970-802-A/200) or record the flap system messages shown on the CMC, through PFD (maintenance page).

NOTE: This action will drive the maintenance personnel to do the correct troubleshooting procedure, during the aircraft restoration.

(3) Open the Flap CB of the failed channel.

(4) Disconnect electrical connector P1101 for channel 1 (J1) or P1102 for channel 2 (J2), as applicable. Figure 401 or Figure 402. Do as follows:

(5) Fasten and protect the electrical connector as follows:

NOTE: This procedure prevents friction between the connector and adjacent parts.

(a) Check the diameter of the connector and cut a 350 mm-long piece of heat-shrinkable spaghetti with the approximate connector diameter.

(b) Slide half of the spaghetti to cover all the connector head.

WARNING: USE AN EXPLOSION-PROOF HEAT GUN IN AREAS WHERE THERE IS RISK OF EXPLOSION. ADJUST THE TEMPERATURE OF THE HEAT GUN TO A VALUE LESS THAN THE AUTO IGNITION TEMPERATURE OF THE FUEL IN THE AIRCRAFT FUEL TANK. IF YOU DO NOT USE THIS PRECAUTION, AN EXPLOSION CAN OCCUR AND CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(c) Apply heat with a heat gun or equivalent, to the heat-shrinkable spaghetti.

(d) Fold the other half and attach the two ends of the spaghetti with tie-down strap (SWPM 20-21-00).

(e) Make sure that the connector is correctly attached and will not move out of position during operation.

(6) Close the Flap CB of the failed channel.

(7) Do a Check of the Flap Control System. Figure 403.

NOTE: An irregular, non-smooth operation can be a sign of mechanical failure.

(a) Set the flaps to the 9-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 9-degree position.

(b) (Applicable only to aircraft equipped with Flap 18-degree) Set the flaps to the 18-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 18-degree position.

(c) Set the flaps to the 22-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 22-degree position.

(d) Set the flaps to the 45-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 (For aircraft PRE-MOD. S.B. 145-27-0020) When the flaps go through the 33-degree position, the dash indication changes to 33.

3 The EICAS display does not show the FLAP FAIL caution message.

4 The EICAS display shows that the flaps are in the 45-degree position.

(e) Set the flaps to the 22-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 (For aircraft PRE-MOD. S.B. 145-27-0020) When the flaps go through the 33-degree position, the dash indication changes to 33.

3 The EICAS display does not show the FLAP FAIL caution message.

4 The EICAS display shows that the flaps are in the 22-degree position.

(f) (Applicable only to aircraft equipped with Flap 18-degree) Set the flaps to the 18-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 18-degree position.

(g) Set the flaps to the 9-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 9-degree position.

(h) Set the flaps to the 0-degree position.

Result:

1 In transit, the position of the flaps on the EICAS display is indicated by numeric format.

2 The EICAS display does not show the FLAP FAIL caution message.

3 The EICAS display shows that the flaps are in the 0-degree position.

(8) Attach a "CHANNEL 1 (or 2) INOP" placard near the flap selector lever.

(9) (For aircraft equipped with FECU PN 363100-1009 only) To make the SPS ADVANCED message go out of view, do as follows:

NOTE: The SPS ADVANCED message can not be cleared in other FECU PN. This FECU can trigger the SPS ADVANCED message when one flap channel is inoperative. Do this procedure before each flight.

(a) Set the flaps to the zero position.

(b) Open the Flap 1 and Flap 2 circuit breakers.

(c) Make sure that the FLAP LOW SPEED message goes out of view and the FLAP FAIL message comes into view.

(d) Close the Flap 1 and Flap 2 circuit breakers.

(e) Make sure that the FLAP FAIL message goes out of view and the FLAP LOW SPEED message comes into view.

(f) Open the IC 1 and IC 2 circuit breakers and unlatch the backup battery pushbutton.

(g) Look to see that the MFDs, PFDs, and EICAS show a red X

(h) Close the IC 1 and IC 2 circuit breakers and latch the backup battery pushbutton.

(i) Make sure that the SPS ADVANCED and FLAP FAIL messages do not show on the EICAS.

NOTE: Do the reset procedure again if the flaps were commanded before the taxiing-out is started.

(10) Write in the aircraft technical logbook that you did the Deactivation Procedure for the flap channel 1 or flap channel 2.

K. Follow-on

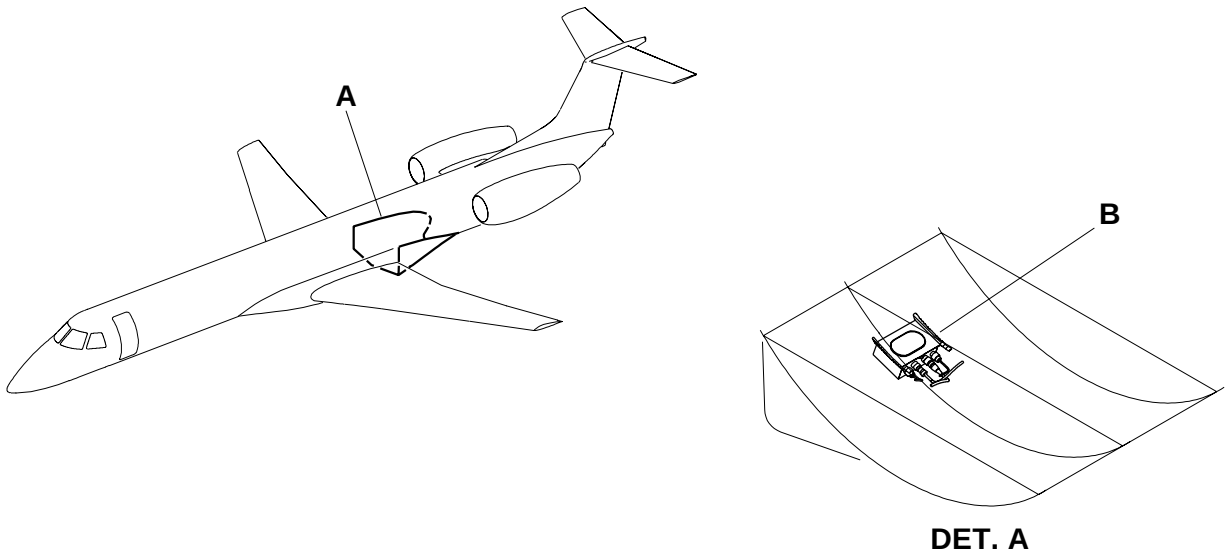
SUBTASK 842-002-A

(1) Install these access panels:

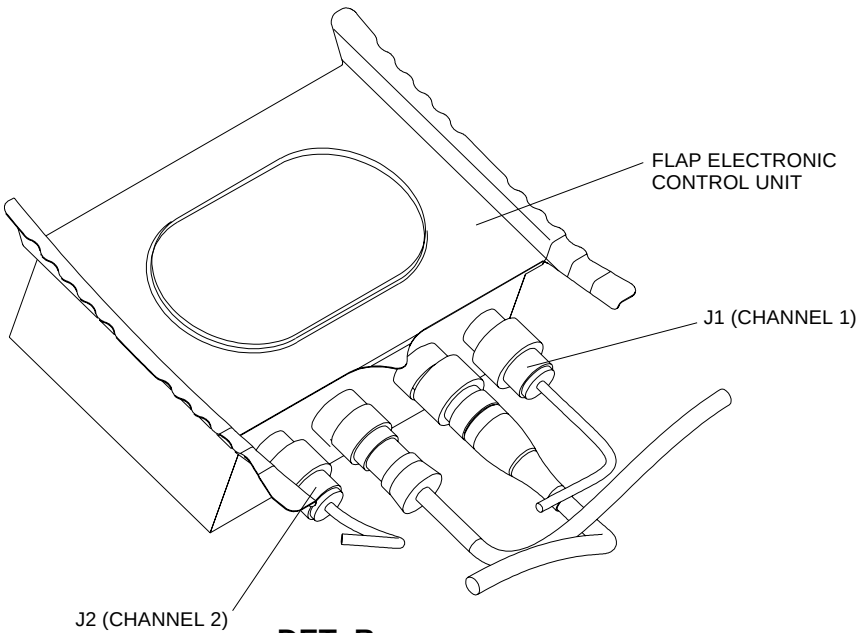
- 193 AL
- 197DR (Applicable only to ERJ -145XR aircraft models).

EFFECTIVITY: ALL

Flap Electronic Control Unit - Connector Location
Figure 401



DET. A



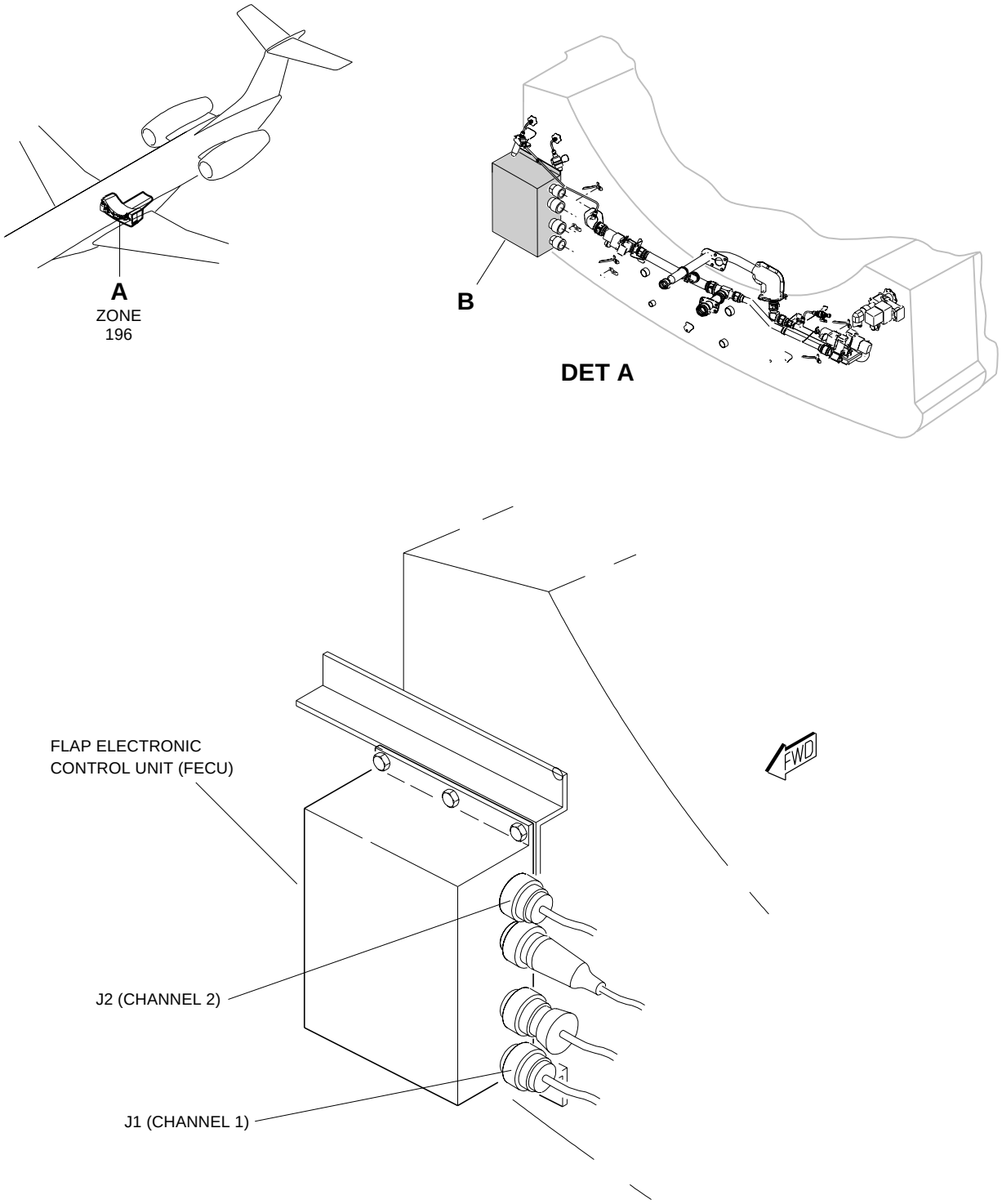
DET. B

EM145RMM270008A.DGN

EFFECTIVITY: APPLICABLE ONLY TO ERJ-145XR AIRCRAFT MODELS

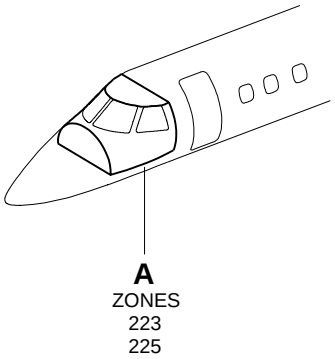
Flap Electronic Control Unit - Connector Location

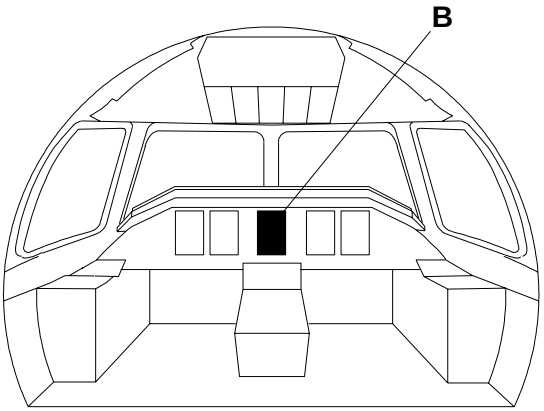
Figure 402



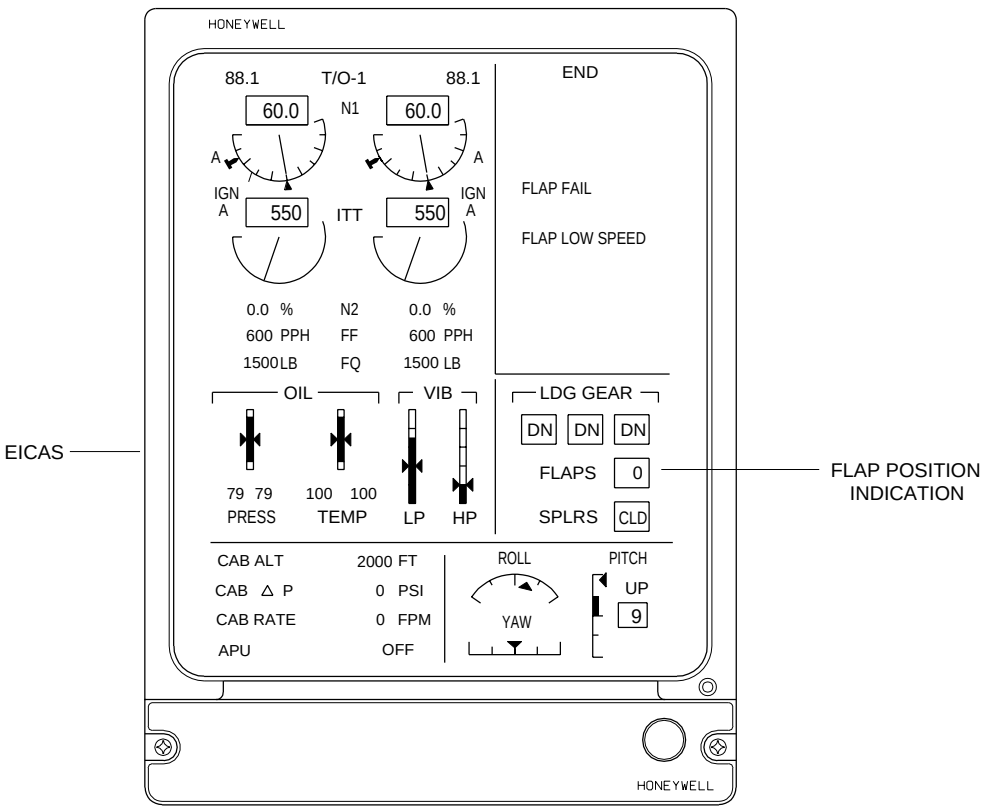
EM145RMM270009B.DGN

EFFECTIVITY: ALL
Flap Control System - Test
Figure 403





DET. A



DET. B

145AMM270053.MCE B

TASK 27-53-00-440-801-A
EFFECTIVITY: ALL

3. FLAP ELECTRICAL/ELECTRONIC REACTIVATION PROCEDURE

A. General

(1) This task gives the procedures to reactivate the flap electrical/electronic components.

(2) This task refers to item 27-53-00 - Flap channels of the DDPM.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 27-51-00-700-801-A/500	FLAP CONTROL SYSTEM - OPERATIONAL CHECK

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
193	193 AL	Rear wing-to-fuselage fairing
197	197DR	Rear wing-to-fuselage fairing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Rear wing-to-fuselage fairing

I. Preparation

SUBTASK 841-003-A

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.

(1) Make sure that the aircraft is safe for maintenance.

(2) Remove these access panels:

- 193 AL
- 197DR (Applicable only to ERJ -145XR aircraft models).

J. Reactivation

SUBTASK 040-003-A

(1) Remove the protective plug.

(2) Unfasten the protection of the electrical connector.

(3) Open the Flap CB of the failed channel.

(4) Connect electrical connector P1101 for channel 1 (J1) or P1102 for channel 2 (J2) as applicable. Figure 401 or Figure 402.

(5) Close the Flap CB of the failed channel.

(6) Do the troubleshooting and the applicable corrective maintenance procedure for the respective flap channel.

(7) Do the operational check of the flap control system AMM TASK 27-51-00-700-801-A/500 to make sure that the flap control system operates correctly.

NOTE: An irregular, non-smooth operation can be a sign of mechanical failure.

(8) (For aircraft equipped with FECU PN 363100-1009 only) Make sure that the SPS ADVANCED message is not shown on the EICAS.

(9) Write in the aircraft technical logbook that you did the Reactivation Procedure for the flap channel 1 or flap channel 2.

K. Follow-on

SUBTASK 842-003-A

(1) (For aircraft equipped with FECU PN 363100-1009 only) Make sure that the SPS ADVANCED message does not show on the EICAS.

(2) Install these access panels:

- 193 AL
- 197DR (Applicable only to ERJ -145XR aircraft models).

(3) Restore the aircraft to the normal condition.

(4) Remove the "CHANNEL 1 (or 2) INOP" placard near the flap selector lever.