HIGHLIGHTS

REVISION NO. 54 May 01/08

Pages which have been revised are outlined below, together with the Highlights of the Revision

CH/SE/SU C PAGES	REASON FOR CHANGE	EFFECTIVITY
CHAPTER 78		
L.E.P. 1- 2	REVISED TO REFLECT THIS REVISION INDICATING NEW,REVISED, AND/OR DELETED PAGES	
78-31-00	EFFECTIVITY UPDATED	
201- 202, 204- 205, 209- 210, 214- 215, 277, 281, 285, 289, 291- 292, 294- 295	EFFECTIVITY UPDATED (THROUGHOUT THE TEXT)	201-225, 227-227, 229-299, 426-499, 503-549, 551-599, 701-749,

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A319/A320/A321

TROUBLE SHOOTING MANUAL

CHAPTER 78

EXHAUST

LIST OF EFFECTIVE PAGES

N, R or D indicates pages which are New, Revised or Deleted respectively
Remove and insert the affected pages and complete the Record of Revisions and the Record of Temporary Revisions as necessary

CH/SE/SU	C	PAGE	DATE
RECORD OF TEMP. REVISION			
L.E.P.	R	1- 2	May01/08
T. of C.		1	Aug01/01
T. of C.		2	May01/05
T. of C.		3	Feb01/08
T. of C.		4	Feb01/08
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78-OBSV		102	May01/05
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78-31-00		A236	Feb01/07								
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	WARNINGS/MALFUNCTIONS	CFDS FAULT MESSAGES				FAULT ISOLATION PROCEDURE
		SOURCE	MESSAGE	ATA	C	
R	ENG 1 - REVERSER FAULT at engine shut-down associated with Upper ECAM DU Warnings ENG 1 REVERSER FAULT					783100 PA227 T 810 867
	ENG 1 - T/R REV REV indication remains amber					780000 P 203 T 810 802
R	ENG 1 - Thrust Reverser Slow to deploy or does not deploy associated with ENG 2 - Thrust Reverser Slow to deploy or does not deploy					783100 PA229 T 810 869
R	ENG 1 T/R REV - Indication steady or flashing amber on ECAM					783100 PA232 T 810 870
R	ENG 1 T/R REV - N1 fluctuations at reverse power selection					783100 PA232 T 810 870
R	ENG 2 - REVERSER FAULT at engine shut-down associated with Upper ECAM DU Warnings ENG 2 REVERSER FAULT					783100 PA228 T 810 868
	ENG 2 - T/R REV REV indication remains amber					780000 P 203 T 810 802
R	ENG 2 - Thrust Reverser Slow to deploy or does not deploy associated with ENG 1 - Thrust Reverser Slow to deploy or does not deploy					783100 PA229 T 810 869

	WARNINGS/MALFUNCTIONS	CFDS FAULT MESSAGES				FAULT ISOLATION PROCEDURE
		SOURCE	MESSAGE	ATA	C	
R	ENG 2 T/R REV - Indication steady or flashing amber on ECAM					783100 PA232 T 810 870
R	ENG 2 T/R REV - N1 fluctuations at reverse power selection					783100 PA232 T 810 870

	WARNINGS/MALFUNCTIONS	CFDS FAULT MESSAGES				FAULT ISOLATION PROCEDURE
		SOURCE	MESSAGE	ATA	C	
		EIU1FAD	HCU (TRPV), HYD ENG1A	783153	1	783100 P 201 T 810 801
R		EIU1FAD	HCU (TRPV), HYD ENG1B	783153	1	783100 P 291 T 810 853
R		EIU1FAD	HCU ENG1A	783151	1	783100 P 275 T 810 847
R		EIU1FAD	HCU ENG1B	783151	1	783100 P 283 T 810 851
R		EIU1FAD	TR LOCK, TR ACT ENG1A	783300	1	783100 PA234 T 810 871
R		EIU1FAD	TR LOCK, TR ACT ENG1A	783300	1	783100 PA238 T 810 875
R		EIU1FAD	TR LOCK, TR ACT ENG1B	783300	1	783100 PA234 T 810 871
R		EIU1FAD	TR LOCK, TR ACT ENG1B	783300	1	783100 PA238 T 810 875
R		EIU1FAD	TR PR SW, J5+J6, ECU	783116	1	783100 PA242 T 810 877
		EIU2FAD	HCU (TRPV), HYD ENG2A	783153	1	783100 P 204 T 810 802
R		EIU2FAD	HCU (TRPV), HYD ENG2B	783153	1	783100 P 294 T 810 854
R		EIU2FAD	HCU ENG2A	783151	1	783100 P 279 T 810 848
R		EIU2FAD	HCU ENG2B	783151	1	783100 P 287 T 810 852
R		EIU2FAD	TR LOCK, TR ACT ENG2A	783300	1	783100 PA236 T 810 872
R		EIU2FAD	TR LOCK, TR ACT ENG2A	783300	1	783100 PA240 T 810 876

	WARNINGS/MALFUNCTIONS	CFDS FAULT MESSAGES				FAULT ISOLATION PROCEDURE
		SOURCE	MESSAGE	ATA	C	
R		EIU2FAD	TR LOCK, TR ACT ENG2B	783300	1	783100 PA236 T 810 872
R		EIU2FAD	TR LOCK, TR ACT ENG2B	783300	1	783100 PA240 T 810 876
R		EIU2FAD	TR PR SW, J5+J6, ECU	783116	1	783100 PA245 T 810 878

TASK 78-00-00-810-801

Loss of the Thrust Reverser Indication on Engine 1 or 2

1. Possible Causes

- DMC-1 (1WT1)
- LATCH-BLOCKER DOOR, UPPER R (3002KM1)
- LATCH-BLOCKER DOOR, LOWER R (3002KM2)
- LATCH-BLOCKER DOOR, UPPER L (3002KM3)
- LATCH-BLOCKER DOOR, LOWER L (3002KM4)
- lower blocker door
- upper blocker door
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM4)
- HCU-THRUST REV (4101KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 31-63-34-000-001	Removal of the DMC (1WT1,1WT2,1WT3)
AMM 31-63-34-400-001	Installation of the DMC (1WT1,1WT2,1WT3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-19-000-001	Removal of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-19-400-001	Installation of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-32-41-000-001	Removal of the Lower Blocker Door
AMM 78-32-41-000-002	Removal of the Upper Blocker Door
AMM 78-32-41-400-001	Installation of the Lower Blocker Door
AMM 78-32-41-400-002	Installation of the Upper Blocker Door

3. Fault Confirmation

A. Test

(1) Do a check to see if the REV indication is shown on the upper ECAM display unit with the DMC3 switched on.

4. Fault Isolation

R A. If the REV indication is present on the upper ECAM display with the DMC3 switched on:

(1) Replace the DMC-1 (1WT1) (Ref. AMM TASK 31-63-34-000-001) and (Ref. AMM TASK 31-63-34-400-001).

R B. If the REV indication is not present on the upper ECAM display unit with
R the DMC3 switched on:

(1) Do a check to make sure that the blocker door latches are correctly unlocked.

(a) If there are not correctly unlocked:
- replace the defective: LATCH-BLOCKER DOOR, UPPER R (3002KM1) or LATCH-BLOCKER DOOR, LOWER R (3002KM2) or LATCH-BLOCKER DOOR, UPPER L (3002KM3) or LATCH-BLOCKER DOOR, LOWER L (3002KM4) (Ref. AMM TASK 78-31-19-000-001) and (Ref. AMM TASK 78-31-19-400-001).

(2) If the fault continues:
- manually release the actuator to make sure that the blocker door or the hydraulic actuator operates correctly.

(a) If the blocker door does not operate correctly:
- replace the defective lower blocker door (Ref. AMM TASK 78-32-41-000-001) (Ref. AMM TASK 78-32-41-400-001) or
- replace the defective upper blocker door (Ref. AMM TASK 78-32-41-000-002) (Ref. AMM TASK 78-32-41-400-002).

(b) If the hydraulic actuator does not operate correctly:
- replace the defective: ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or ACTUATOR-BLOCKER DOOR, LOWER L (3001KM3) ACTUATOR-BLOCKER DOOR, UPPER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) (Ref. AMM TASK 78-31-41-400-001).

(c) If the blocker door or hydraulic actuator operates correctly:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

C. Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

TASK 78-00-00-810-802

REV Indication Stays Amber on Engine 1 or 2

1. Possible Causes

- DMC-1 (1WT1)
- LATCH-BLOCKER DOOR, UPPER R (3002KM1)
- LATCH-BLOCKER DOOR, LOWER R (3002KM2)
- LATCH-BLOCKER DOOR, LOWER L (3002KM3)
- LATCH-BLOCKER DOOR, LOWER L (3002KM4)
- lower blocker door
- upper blocker door
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 31-63-34-000-001	Removal of the DMC (1WT1,1WT2,1WT3)
AMM 31-63-34-400-001	Installation of the DMC (1WT1,1WT2,1WT3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-19-000-001	Removal of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-19-400-001	Installation of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-32-41-000-001	Removal of the Lower Blocker Door
AMM 78-32-41-000-002	Removal of the Upper Blocker Door
AMM 78-32-41-400-001	Installation of the Lower Blocker Door
AMM 78-32-41-400-002	Installation of the Upper Blocker Door

3. Fault Confirmation

A. Test

(1) Do a check to see if the REV indication stays amber on the upper ECAM display unit with the DMC3 switched on.

4. Fault Isolation

A. If the REV indication does not stay amber on the upper ECAM display unit with the DMC3 switched on:

(1) Replace the DMC-1 (1WT1) (Ref. AMM TASK 31-63-34-000-001) and (Ref. AMM TASK 31-63-34-400-001).

B. If the REV indication stays amber on on the upper ECAM display unit with the DMC3 switched on:

(1) Manually unlock the latches to make sure that the blocker doors operate correctly.

(a) If the blocker door does not operate correctly:
- replace the defective: LATCH-BLOCKER DOOR, UPPER R (3002KM1) or LATCH-BLOCKER DOOR, LOWER R (3002KM2) or LATCH-BLOCKER DOOR, LOWER L (3002KM3) or LATCH-BLOCKER DOOR, LOWER L (3002KM4) (Ref. AMM TASK 78-31-19-000-001) and (Ref. AMM TASK 78-31-19-400-001).

(2) If the fault continues:
- manually release the actuator to make sure that the blocker door or the hydraulic actuator operates correctly.

(a) If the blocker door does not operate correctly:
- replace the defective lower blocker door (Ref. AMM TASK 78-32-41-000-001) (Ref. AMM TASK 78-32-41-400-001) or
- replace the defective upper blocker door (Ref. AMM TASK 78-32-41-000-002) (Ref. AMM TASK 78-32-41-400-002).

(b) If the hydraulic actuator does not operate correctly:
- replace the defective: ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) (Ref. AMM TASK 78-31-41-400-001).

C. Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

R

TASK 78-31-00-810-801

Failure of the Hydraulic Pressurizing Valve on Engine 1

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- HCU pressure switch (4102KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

R **ON A/C 201-205, 227-227, 229-240, 276-283, 476-480,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (1A) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).

If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.
If warning ENG 1 REVERSER FAULT and maintenance message HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 227-227, 229-239, 241-299, 426-478, 481-499, 503-549,
R 551-599, 701-749,
R Post SB 73-1058 For A/C 201-205,227-227,229-239,276-283,476-478,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (1A) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

**ON A/C ALL

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected not open when reverse is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch (4102KS):
- if the switch is closed, there is no pressure,
- if the switch is open, the valve is pressurized.

(1) If the test does not give the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- no further action is required.

(a) If the fault becomes repetitive:
- do the trouble shooting as if the maintenance message was confirmed on test.

(2) If the test does not give the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test gives the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(4) If the test gives the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-802

Failure of the Hydraulic Pressurizing Valve on Engine 2

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- HCU pressure switch (4102KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

R **ON A/C 201-205, 227-227, 229-240, 276-283, 476-480,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (2A) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).
If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.

If warning ENG 2 REVERSER FAULT and maintenance message HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 227-227, 229-239, 241-299, 426-478, 481-499, 503-549,
R 551-599, 701-749,
R Post SB 73-1058 For A/C 201-205,227-227,229-239,276-283,476-478,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (2A) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

**ON A/C ALL

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected not open when reverse is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch (4102KS):
- if the switch is closed, there is no pressure,
- if the switch is open, the valve is pressurized.

(1) If the test does not give the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- no further action is required.

(a) If the fault becomes repetitive:
- do the trouble shooting as if the maintenance message was confirmed on test.

(2) If the test does not give the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test gives the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(4) If the test gives the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-815

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the two Channels on Engine 1

1. Possible Causes

- RELAY-THRUST REV INHIBITION, ENG 1 (14KS1)
- EIU-1 (1KS1)
- CTL UNIT-THROTTLE, ENG 1 (8KS1)
- SEC-1 (1CE1)
- SEC-2 (1CE2)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-817	Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel A on Engine 1
78-31-00-810-818	Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel B on Engine 1
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 73-25-34-000-040	Removal of the Engine Interface Unit (EIU)
AMM 73-25-34-400-040	Installation of the Engine Interface Unit (EIU)
AMM 76-11-19-000-042	Removal of the Throttle Control Unit (8KS1, 8KS2)
AMM 76-11-19-400-042	Installation of the Throttle Control Unit (8KS1, 8KS2)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message is generated when the ECU detects an open circuit or a short to ground on both solenoids of the HCU directional valve on channel A and channel B or on associated electrical wiring. Most probable cause is an inhibition relay (14KS1) failure or of its control.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test gives the maintenance message DIR VLV, J5, ECU then DIR VLV, J6, ECU:
- remove the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) from its base on 187VU,
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- set the engine 1 throttle lever to the reverse thrust position,
- do a check for 28VDC at pin A/X of the relay base.

(a) If there is 28VDC:
- make sure that ground is present at pin A/Z of the relay base.

1 If there is no ground:
- repair the wiring (Ref. ASM 73-25/16).

2 If there is ground:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

3 If the fault continues:
- do the trouble shooting for each maintenance message DIR VLV, J5, ECU (Ref. TASK 78-31-00-810-817) then DIR VLV, J6, ECU (Ref. TASK 78-31-00-810-818).

(b) If there is no 28VDC:
- set the throttle levers to forward idle position,
- on the overhead panel 50VU, push the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend goes off,
- remove the EIU1 (1KS1) (Ref. AMM TASK 73-25-34-000-040),
- do a continuity and an insulation check of the wiring between pin A/X of the relay base 14KS1 and pin AA/10A of the EIU1 (1KS1) (Ref. ASM 73-25/16).

1 If there is an open circuit or a short to ground:
- repair the wiring.

2 If nothing is found :
- do a continuity check (insulation check not required) of the wiring (Ref. ASM 73-25/16) between:
  . the EIU1 (1KS1) pin AA/4C and the TCU1 (8KS1) pin E/C
  . the EIU1 (1KS1) pin AA/4A and the TCU1 (8KS1) pin E/C.

a If there is an open circuit:
- repair the associated wiring.

b If nothing is found:
- replace the EIU-1 (1KS1) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

c If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 1 (8KS1) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

(2) If the test does not give the maintenance message DIR VLV, J5, ECU then DIR VLV, J6, ECU:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the EIU-1 (1KS1) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

(c) If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 1 (8KS1) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message is generated when the ECU detects an open circuit or a short to ground on both solenoids of the HCU directional valve on channel A and channel B or on associated electrical wiring. Most probable cause is an inhibition relay (14KS1) failure or of its control.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test gives the maintenance message HCU (TRDV), J5, ECU then HCU (TRDV), J6, ECU:
- remove the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) from its base on 187VU,
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- set the engine 1 throttle lever to the reverse thrust position,
- do a check for 28VDC at pin A/X of the relay base.

(a) If there is 28VDC:
- make sure that ground is present at pin A/Z of the relay base.

1 If there is no ground:
- repair the wiring (Ref. ASM 73-25/16).

2 If there is ground:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

3 If the fault continues:
- do the trouble shooting for each maintenance message HCU (TRDV), J5, ECU (Ref. TASK 78-31-00-810-817) then HCU (TRDV), J6, ECU (Ref. TASK 78-31-00-810-818).

(b) If there is no 28VDC:
- set the throttle levers to forward idle position,
- on the overhead panel 50VU, push the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend goes off,
- remove the EIU1 (1KS1) (Ref. AMM TASK 73-25-34-000-040),
- do a continuity and an insulation check of the wiring between pin A/X of the relay base 14KS1 and pin AA/10A of the EIU1 (1KS1) (Ref. ASM 73-25/16).

1 If there is an open circuit or a short to ground:
- repair the wiring.

2 If nothing is found :
- do a continuity check (insulation check not required) of the wiring (Ref. ASM 73-25/16) between:
  . the EIU1 (1KS1) pin AA/4C and the SEC1 (1CE1) pin AB/15E
  . the EIU1 (1KS1) pin AA/4A and the SEC2 (1CE2) pin AB/15E
  . the relay 14KS1 pin A/X and the EIU1 (1KS1) pin AB/10A.

a If there is an open circuit:
- repair the associated wiring.

b If nothing is found:
- replace the EIU-1 (1KS1) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

c If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 1 (8KS1) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

d If the fault continues:
- replace the SEC-1 (1CE1) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

e If the fault continues:
- replace the SEC-2 (1CE2) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J5, ECU
R then HCU (TRDV), J6, ECU:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the EIU-1 (1KS1) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

(c) If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 1 (8KS1) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

(d) If the fault continues:
- replace the SEC-1 (1CE1) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

(e) If the fault continues:
- replace the SEC-2 (1CE2) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

**ON A/C ALL

B. Do the test given in Para. 3.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-816

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the two Channels on Engine 2

1. Possible Causes

- RELAY-THRUST REV INHIBITION, ENG 2 (14KS2)
- EIU-2 (1KS2)
- CTL UNIT-THROTTLE, ENG 2 (8KS2)
- SEC-1 (1CE1)
- SEC-3 (1CE3)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-819	Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel A on Engine 2
78-31-00-810-820	Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel B on Engine 2
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 73-25-34-000-040	Removal of the Engine Interface Unit (EIU)
AMM 73-25-34-400-040	Installation of the Engine Interface Unit (EIU)
AMM 76-11-19-000-042	Removal of the Throttle Control Unit (8KS1, 8KS2)
AMM 76-11-19-400-042	Installation of the Throttle Control Unit (8KS1, 8KS2)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message is generated when the ECU detects an open circuit or a short to ground on both solenoids of the HCU directional valve on channel A and channel B or on associated electrical wiring. Most probable cause is an inhibition relay (14KS2) failure or of its control.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test gives the maintenance message DIR VLV, J5, ECU then DIR VLV, J6, ECU:
- remove the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) from its base on 188VU,
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend comes on,
- set the engine 2 throttle lever to the reverse thrust position,
- do a check for 28VDC at pin A/X of the relay base.

(a) If there is 28VDC:
- make sure that ground is present at pin A/Z of the relay base.

1 If there is no ground:
- repair the wiring (Ref. ASM 73-25/16).

2 If there is ground:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

3 If the fault continues:
- do the trouble shooting for each maintenance message DIR VLV, J5, ECU (Ref. TASK 78-31-00-810-819) then DIR VLV, J6, ECU (Ref. TASK 78-31-00-810-820).

(b) If there is no 28VDC:
- set the throttle levers to forward idle position,
- on the overhead panel 50VU, push the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend goes off,
- remove the EIU2 (1KS2) (Ref. AMM TASK 73-25-34-000-040),
- do a continuity and an insulation check of the wiring between pin A/X of the relay base 14KS2 and pin AA/10A of the EIU2 (1KS2) (Ref. ASM 73-25/16).

1 If there is an open circuit or a short to ground:
- repair the wiring.

2 If nothing is found :
- do a continuity check (insulation check not required) of the wiring (Ref. ASM 73-25/16) between:
  . the EIU2 (1KS2) pin AA/4C and the TCU2 (8KS2) pin E/C
  . the EIU2 (1KS2) pin AA/4A and the TCU2 (8KS2) pin E/C.

a If there is an open circuit:
- repair the associated wiring.

b If nothing is found:
- replace the EIU-2 (1KS2) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

c If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 2 (8KS2) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

(2) If the test does not give the maintenance message DIR VLV, J5, ECU then DIR VLV, J6, ECU:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the EIU-2 (1KS2) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

(c) If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 2 (8KS2) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message is generated when the ECU detects an open circuit or a short to ground on both solenoids of the HCU directional valve on channel A and channel B or on associated electrical wiring. Most probable cause is an inhibition relay (14KS2) failure or of its control.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test gives the maintenance message HCU (TRDV), J5, ECU then HCU (TRDV), J6, ECU:
- remove the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) from its base on 188VU,
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend comes on,
- set the engine 2 throttle lever to the reverse thrust position,
- do a check for 28VDC at pin A/X of the relay base.

(a) If there is 28VDC:
- make sure that ground is present at pin A/Z of the relay base.

1 If there is no ground:
- repair the wiring (Ref. ASM 73-25/16).

2 If there is ground:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

3 If the fault continues:
- do the trouble shooting for each maintenance message HCU (TRDV), J5, ECU (Ref. TASK 78-31-00-810-819) then HCU (TRDV), J6, ECU (Ref. TASK 78-31-00-810-820).

(b) If there is no 28VDC:
- set the throttle levers to forward idle position,
- on the overhead panel 50VU, push the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend goes off,
- remove the EIU1 (1KS1) (Ref. AMM TASK 73-25-34-000-040),
- do a continuity and an insulation check of the wiring between pin A/X of the relay base 14KS2 and pin AA/10A of the EIU2 (1KS2) (Ref. ASM 73-25/16).

1 If there is an open circuit or a short to ground:
- repair the wiring.

2 If nothing is found :
- do a continuity check (insulation check not required) of the wiring (Ref. ASM 73-25/16) between:
  . the EIU2 (1KS2) pin AA/4C and the SEC1 (1CE1) pin AE/15F
  . the EIU1 (1KS2) pin AA/4A and the SEC3 (1CE3) pin AE/15F
  . the relay 14KS2 pin A/X and the EIU2 (1KS2) pin AB/10A.

a If there is an open circuit:
- repair the associated wiring.

b If nothing is found:
- replace the EIU-2 (1KS2) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

c If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 2 (8KS2) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

d If the fault continues:
- replace the SEC-1 (1CE1) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

e If the fault continues:
- replace the SEC-3 (1CE3) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J5, ECU
R then HCU (TRDV), J6, ECU:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the EIU-2 (1KS2) (Ref. AMM TASK 73-25-34-000-040) and (Ref. AMM TASK 73-25-34-400-040).

(c) If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 2 (8KS2) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

(d) If the fault continues:
- replace the SEC-1 (1CE1) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

(e) If the fault continues:
- replace the SEC-3 (1CE3) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

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B. Do the test given in Para. 3.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-817

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel A on Engine 1

1. Possible Causes

- HCU-THRUST REV (4101KS)
- RELAY-THRUST REV INHIBITION, ENG 1 (14KS1)
- ECU (4000KS)
- thrust reverser harness
- aircraft wiring

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (1A) (Ref. AMM TASK 78-31-00-710-042).

R NOTE : The maintenance message HCU (TRDV), J5, ECU may be recorded in
R the Post Flight Report (PFR) after a ground run and associated to ECAM warning ENG X REVERSER FAULT shown at engine shut down (with master lever in OFF position).
If the ECU PN 1820M36P07 or 1820M89P07 is installed on the engine, the message is spurious. Only in this case, no trouble shooting action is required.
The following trouble shooting procedure must be carried out if the failure was detected in any other condition than above described.

4. Fault Isolation

R A. The fault message is generated when the ECU detects an open circuit or a
R short to ground on the solenoid of the HCU directional valve on channel A or on associated electrical wiring.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

R (1) If the test gives the maintenance message HCU (TRDV), J5, ECU:
- disconnect the harness from the connector B of the HCU and apply 28VDC between pin B/2 (+) and pin B/3 (-) on the HCU,
- make sure that the value of the current is between 350 and 630 mA.

(a) If the current is out of the specified limits:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified limits:
R - on the overhead panel 50VU, push and release the
R P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- set the engine 1 throttle lever to the reverse thrust position,
- disconnect the harness J5 from the ECU then install a jumper wire between pins 2 and 3 on the thrust reverser harness J5 connector to the HCU,
- do a continuity check between pins 7 and 8 of the harness J5.

1 If there is no continuity:
- remove the jumper wire from the harness pins 2 and 3,
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

a If the fault continues:
- do a check of the thrust reverser harness including junction box and the aircraft wiring for open circuit (Ref. AMM TASK 78-31-42-210-041).

b If there is no continuity:
- repair or replace as required (Ref. ASM 73-25/16).

c If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If there is continuity:
- remove the jumper wire from the harness pins 2 and 3,
- do a resistance check at the harness J5 connector to the ECU between:
. pins 7 and 11 (>10 megohms)
. pins 7 and 8 (>10 megohms)
. pin 7 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
- repair or replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049), or the aircraft wiring between the ECU and the HCU (Ref. ASM 73-25/16).

b If the resistance values are in the specified limits:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J5,
R ECU:
- this indicates that the fault was intermittent and is no longer present,
R - do a check of the thrust reverser harness connectors at the ECU,
R HCU and junction box for looseness, contamination or damaged pins,
- clean, retighten or replace harness as required (Ref. AMM TASK 78-31-42-210-041).

(a) If nothing is found:
- no additional action is required.

(b) If the fault becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

1 If the fault continues:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

2 If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

3 If the fault continues:
- replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-818

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel B on Engine 1

1. Possible Causes

- HCU-THRUST REV (4101KS)
- RELAY-THRUST REV INHIBITION, ENG 1 (14KS1)
- ECU (4000KS)
- thrust reverser harness
- aircraft wiring

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (1B) (Ref. AMM TASK 78-31-00-710-042).

R NOTE : The maintenance message HCU (TRDV), J6, ECU may be recorded in
R the Post Flight Report (PFR) after a ground run and associated to ECAM warning ENG X REVERSER FAULT shown at engine shut down (with master lever in OFF position).
If the ECU PN 1820M36P07 or 1820M89P07 is installed on the engine, the message is spurious. Only in this case, no trouble shooting action is required.
The following trouble shooting procedure must be carried out if the failure was detected in any other condition than above described.

4. Fault Isolation

R A. The fault message is generated when the ECU detects an open circuit or a
R short to ground on the solenoid of the HCU directional valve on channel B or on associated electrical wiring.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

R (1) If the test gives the maintenance message HCU (TRDV), J6, ECU:
- disconnect the harness from the connector B of the HCU and apply 28VDC between pin B/4 (+) and pin B/5 (-) on the HCU,
- make sure that the value of the current is between 350 and 630 mA.

(a) If the current is out of the specified limits:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified limits:
R - on the overhead panel 50VU, push and release the
R P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- set the engine 1 throttle lever to the reverse thrust position,
- disconnect the harness J6 from the ECU then install a jumper wire between pins 4 and 5 on the thrust reverser harness J6 connector to the HCU,
- do a continuity check between pins 7 and 8 of the harness J6.

1 If there is no continuity:
- remove the jumper wire from the harness pins 4 and 5,
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

a If the fault continues:
- do a check of the thrust reverser harness including junction box and the aircraft wiring for open circuit (Ref. AMM TASK 78-31-42-210-041).

b If there is no continuity:
- repair or replace as required (Ref. ASM 73-25/16).

c If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If there is continuity:
- remove the jumper wire from the harness pins 4 and 5,
- do a resistance check at the harness J6 connector to the ECU between:
. pins 7 and 11 (>10 megohms)
. pins 7 and 8 (>10 megohms)
. pin 7 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
- repair or replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049), or the aircraft wiring between the ECU and the HCU (Ref. ASM 73-25/16).

b If the resistance values are in the specified limits:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J6,
R ECU:
- this indicates that the fault was intermittent and is no longer present,
R - do a check of the thrust reverser harness connectors at the ECU,
R HCU and junction box for looseness, contamination or damaged pins,
- clean, retighten or replace harness as required (Ref. AMM TASK 78-31-42-210-041).

(a) If nothing is found:
- no additional action is required.

(b) If the fault becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

1 If the fault continues:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (Ref. ASM 73-25/16).

2 If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

3 If the fault continues:
- replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-819

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel A on Engine 2

1. Possible Causes

- HCU-THRUST REV (4101KS)
- RELAY-THRUST REV INHIBITION, ENG 2 (14KS2)
- ECU (4000KS)
- thrust reverser harness
- aircraft wiring

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (2A) (Ref. AMM TASK 78-31-00-710-042).

R NOTE : The maintenance message HCU (TRDV), J5, ECU may be recorded in
R the Post Flight Report (PFR) after a ground run and associated to ECAM warning ENG X REVERSER FAULT shown at engine shut down (with master lever in OFF position).
If the ECU PN 1820M36P07 or 1820M89P07 is installed on the engine, the message is spurious. Only in this case, no trouble shooting action is required.
The following trouble shooting procedure must be carried out if the failure was detected in any other condition than above described.

4. Fault Isolation

R A. The fault message is generated when the ECU detects an open circuit or a
R short to ground on the solenoid of the HCU directional valve on channel A or on associated electrical wiring.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

R (1) If the test gives the maintenance message HCU (TRDV), J5, ECU:
- disconnect the harness from the connector B of the HCU and apply 28VDC between pin B/2 (+) and pin B/3 (-) on the HCU,
- make sure that the value of the current is between 350 and 630 mA.

(a) If the current is out of the specified limits:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified limits:
R - on the overhead panel 50VU, push and release the
R P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend comes on,
- set the engine 2 throttle lever to the reverse thrust position,
- disconnect the harness J5 from the ECU then install a jumper wire between pins 2 and 3 on the thrust reverser harness J5 connector to the HCU,
- do a continuity check between pins 7 and 8 of the harness J5.

1 If there is no continuity:
- remove the jumper wire from the harness pins 2 and 3,
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

a If the fault continues:
- do a check of the thrust reverser harness including junction box and the aircraft wiring for open circuit (Ref. AMM TASK 78-31-42-210-041).

b If there is no continuity:
- repair or replace as required (Ref. ASM 73-25/16).

c If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If there is continuity:
- remove the jumper wire from the harness pins 2 and 3,
- do a resistance check at the harness J5 connector to the ECU between:
. pins 7 and 11 (>10 megohms)
. pins 7 and 8 (>10 megohms)
. pin 7 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
- repair or replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049), or the aircraft wiring between the ECU and the HCU (Ref. ASM 73-25/16).

b If the resistance values are in the specified limits:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J5,
R ECU:
- this indicates that the fault was intermittent and is no longer present,
R - do a check of the thrust reverser harness connectors at the ECU,
R HCU and junction box for looseness, contamination or damaged pins,
- clean, retighten or replace harness as required (Ref. AMM TASK 78-31-42-210-041).

(a) If nothing is found:
- no additional action is required.

(b) If the fault becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

1 If the fault continues:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

2 If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

3 If the fault continues:
- replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-820

Failure of the Control of the Thrust-Reverser HCU Directional-Valve through the Channel B on Engine 2

1. Possible Causes

- HCU-THRUST REV (4101KS)
- RELAY-THRUST REV INHIBITION, ENG 2 (14KS2)
- ECU (4000KS)
- thrust reverser harness
- aircraft wiring

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (2B) (Ref. AMM TASK 78-31-00-710-042).

R NOTE : The maintenance message HCU (TRDV), J6, ECU may be recorded in
R the Post Flight Report (PFR) after a ground run and associated to ECAM warning ENG X REVERSER FAULT shown at engine shut down (with master lever in OFF position).
If the ECU PN 1820M36P07 or 1820M89P07 is installed on the engine, the message is spurious. Only in this case, no trouble shooting action is required.
The following trouble shooting procedure must be carried out if the failure was detected in any other condition than above described.

4. Fault Isolation

R A. The fault message is generated when the ECU detects an open circuit or a
R short to ground on the solenoid of the HCU directional valve on channel B or on associated electrical wiring.

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

R (1) If the test gives the maintenance message HCU (TRDV), J6, ECU:
- disconnect the harness from the connector B of the HCU and apply 28VDC between pin B/4 (+) and pin B/5 (-) on the HCU,
- make sure that the value of the current is between 350 and 630 mA.

(a) If the current is out of the specified limits:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified limits:
R - on the overhead panel 50VU, push and release the
R P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend comes on,
- set the engine 2 throttle lever to the reverse thrust position,
- disconnect the harness J6 from the ECU then install a jumper wire between pins 4 and 5 on the thrust reverser harness J6 connector to the HCU,
- do a continuity check between pins 7 and 8 of the harness J6.

1 If there is no continuity:
- remove the jumper wire from the harness pins 4 and 5,
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

a If the fault continues:
- do a check of the thrust reverser harness including junction box and the aircraft wiring for open circuit (Ref. AMM TASK 78-31-42-210-041).

b If there is no continuity:
- repair or replace as required (Ref. ASM 73-25/16).

c If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If there is continuity:
- remove the jumper wire from the harness pins 4 and 5,
- do a resistance check at the harness J6 connector to the ECU between:
. pins 7 and 11 (>10 megohms)
. pins 7 and 8 (>10 megohms)
. pin 7 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
- repair or replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049), or the aircraft wiring between the ECU and the HCU (Ref. ASM 73-25/16).

b If the resistance values are in the specified limits:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

R (2) If the test does not give the maintenance message HCU (TRDV), J6,
R ECU:
- this indicates that the fault was intermittent and is no longer present,
R - do a check of the thrust reverser harness connectors at the ECU,
R HCU and junction box for looseness, contamination or damaged pins,
- clean, retighten or replace harness as required (Ref. AMM TASK 78-31-42-210-041).

(a) If nothing is found:
- no additional action is required.

(b) If the fault becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

1 If the fault continues:
- replace the RELAY-THRUST REV INHIBITION, ENG 2 (14KS2) (Ref. ASM 73-25/16).

2 If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

3 If the fault continues:
- replace the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-821

R Thrust-Reverser HCU Pressure-Switch Feedback Disagree on Engine 1

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- thrust reverser harness
- junction box
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do an operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R A. This fault message is generated if there is a disagreement between
R channel A and channel B on the HCU pressure switch output signal.

(1) If the test gives the maintenance message TR PR SW, J5/J6, ECU:
- get access to the HCU,
- disconnect the harnesses J5 and J6 from the HCU pressure switch (4102KS),
- install jumper wires between pins 2 and 3 on the harness J5 connector and between pins 4 and 5 on the harness J6 connector,

- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check at each harness connector to the ECU (Ref. ASM 73-25/16) between:
  . pins 12 and 13 (<5 ohms)
  . pins 12 and 11 (>10 megohms)
R . pin 12 and the ground (>10 megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(b) If the resistance values are out of the specified limits:
- do a continuity and insulation check of the harnesses between the ECU and the HCU pressure switch,
- repair or replace the defective harness J5 or harness J6 or thrust reverser harness or junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(c) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message TR PR SW, J5/J6, ECU; this is indicative of an intermittent fault that may be caused by defective electrical contacts in the harnesses and junction box between the ECU and the HCU:
- do a check of the harnesses J5 and J6 and the thrust reverser harnesses and the junction box between the ECU and the HCU for correct condition,
- do a check of the connectors for looseness, bent pins, corrosion or contamination.

(a) If damage is found:
- clean, repair or replace as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found and fault continues while maintenance message is never confirmed during the test:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(c) If the fault continues:
- repair or replace the defective harnesses J5 or J6 or thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(d) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-822

R Thrust-Reverser HCU Pressure-Switch Feedback Disagree on Engine 2

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- thrust reverser harness
- junction box
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do an operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R A. This fault message is generated if there is a disagreement between
R channel A and channel B on the HCU pressure switch output signal.

(1) If the test gives the maintenance message TR PR SW, J5/J6, ECU:
- get access to the HCU,
- disconnect the harnesses J5 and J6 from the HCU pressure switch (4102KS),
- install jumper wires between pins 2 and 3 on the harness J5 connector and between pins 4 and 5 on the harness J6 connector,

- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check at each harness connector to the ECU (Ref. ASM 73-25/16) between:
  . pins 12 and 13 (<5 ohms)
  . pins 12 and 11 (>10 megohms)
R . pin 12 and the ground (>10 megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(b) If the resistance values are out of the specified limits:
- do a continuity and insulation check of the harnesses between the ECU and the HCU pressure switch,
- repair or replace the defective harness J5 or harness J6 or thrust reverser harness or junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(c) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message TR PR SW, J5/J6, ECU; this is indicative of an intermittent fault that may be caused by defective electrical contacts in the harnesses and junction box between the ECU and the HCU:
- do a check of the harnesses J5 and J6 and the thrust reverser harnesses and the junction box between the ECU and the HCU for correct condition,
- do a check of the connectors for looseness, bent pins, corrosion or contamination.

(a) If damage is found:
- clean, repair or replace as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found and fault continues while maintenance message is never confirmed during the test:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(c) If the fault continues:
- repair or replace the defective harnesses J5 or J6 or thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(d) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-823

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the two Channels on Engine 1

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- J5, J6 and thrust reverser harnesses

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-825	Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel A on Engine 1
78-31-00-810-826	Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel B on Engine 1
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R A. The fault messages are generated when the ECU detects an open circuit or
R a short to ground on both solenoids of the HCU pressurizing valve on channel A and channel B or on associated electrical wiring.

R (1) If the test gives the maintenance message HCU (TRPV), J5, ECU then
R HCU (TRPV), J6, ECU:
- do the trouble shooting of each individual channel per respective
R trouble shooting procedure of the maintenance message HCU (TRPV) ,
R J5, ECU (Ref. TASK 78-31-00-810-825) then HCU (TRPV) , J6, ECU
R (Ref. TASK 78-31-00-810-826).

R (2) If the test does not give the maintenance message HCU (TRPV), J5, ECU
R then HCU (TRPV), J6, ECU: this indicates that the fault was
R intermittent and is no longer present:
- do a check of the J5, J6 and thrust reverser harnesses and of the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of connectors for looseness, contamination, bent pins.

(a) If damage is found:
- retighten, clean or replace as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found:
- no additional action is required.

R (3) If the maintenance message HCU (TRPV), J5, ECU then HCU (TRPV), J6,
R ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the J5, J6 and thrust reverser harnesses (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-824

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the two Channels on Engine 2

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- J5, J6 and thrust reverser harnesses

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-827	Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel A on Engine 2
78-31-00-810-828	Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel B on Engine 2
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

R A. The fault messages are generated when the ECU detects an open circuit or
R a short to ground on both solenoids of the HCU pressurizing valve on channel A and channel B or on associated electrical wiring.

R (1) If the test gives the maintenance message HCU (TRPV), J5, ECU then
R HCU (TRPV), J6, ECU:
- do the trouble shooting of each individual channel per respective
R trouble shooting procedure of the maintenance message HCU (TRPV) ,
R J5, ECU (Ref. TASK 78-31-00-810-827) then HCU (TRPV) , J6, ECU
R (Ref. TASK 78-31-00-810-828).

R (2) If the test does not give the maintenance message HCU (TRPV), J5, ECU
R then HCU (TRPV), J6, ECU is not confirmed; this indicates that the
R fault was intermittent and is no longer present,
- do a check of the J5, J6 and thrust reverser harnesses and of the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of connectors for looseness, contamination, bent pins.

(a) If damage is found:
- retighten, clean or replace as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found:
- no additional action is required.

R (3) If the maintenance message HCU (TRPV), J5, ECU then HCU (TRPV), J6,
R ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the J5, J6 and thrust reverser harnesses (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-825

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel A on Engine 1

1. Possible Causes

R - HCU-THRUST REV (4101KS)
R - ECU (4000KS)
R - harness

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated when the ECU detects an open circuit or a short to ground on the solenoid of the HCU pressurizing valve on channel A or on associated electrical wiring.

(1) If the test gives the maintenance message HCU (TRPV), J5, ECU:
- disconnect the harness J5 from the ECU (4000KS),
- apply 28VDC between pin 17 (+) and pin 18 (-) on harness J5 and do a check of the value of the current, which must be between 350 and 630 mA (Ref. ASM 73-25/16).

(a) If the current is out of the specified values:
- disconnect the channel A harness from the HCU-THRUST REV (4101KS) and do an insulation and continuity check of the harness J5 and thrust reverser harness between the ECU and the HCU connector A.

1 If there is a fault:
- repair or replace the harness J5 or the thrust reverser harness or the junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified values:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message HCU (TRPV), J5, ECU, this indicates that the fault was intermittent and is no longer present:
- do a check of the harness J5, the thrust reverser harness and the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of the connectors for looseness, contamination, bent pins.

(a) If damage is found:
- clean, retighten or replace the harness as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found:
- no additional action is required.

(3) If the fault message HCU (TRPV), J5, ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the harness J5 and the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-826

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel B on Engine 1

1. Possible Causes

R - HCU-THRUST REV (4101KS)
R - ECU (4000KS)
R - harness

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated when the ECU detects an open circuit or a short to ground on the solenoid of the HCU pressurizing valve on channel B or on associated electrical wiring.

(1) If the test gives the maintenance message HCU (TRPV), J6, ECU:
- disconnect the harness J6 from the ECU (4000KS),
- apply 28VDC between pin 17 (+) and pin 18 (-) on harness J6 and do a check of the value of the current, which must be between 350 and 630 mA (Ref. ASM 73-25/16).

(a) If the current is out of the specified values:
- disconnect the channel B harness from the HCU-THRUST REV (4101KS) and do an insulation and continuity check of the harness J6 and thrust reverser harness between the ECU and the HCU connector A.

1 If there is a fault:
- repair or replace the harness J6 or the thrust reverser harness or the junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified values:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message HCU (TRPV), J6, ECU, this indicates that the fault was intermittent and is no longer present:
- do a check of the harness J6, the thrust reverser harness and the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of the connectors for looseness, contamination, bent pins.

(a) If damage is found:
- clean, retighten or replace the harness as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found:
- no additional action is required.

(3) If the fault message HCU (TRPV), J6, ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the harness J6 and the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-827

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel A on Engine 2

1. Possible Causes

R - HCU-THRUST REV (4101KS)
R - ECU (4000KS)
R - harness

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated when the ECU detects an open circuit or a short to ground on the solenoid of the HCU pressurizing valve on channel A or on associated electrical wiring.

(1) If the test gives the maintenance message HCU (TRPV), J5, ECU:
- disconnect the harness J5 from the ECU (4000KS),
- apply 28VDC between pin 17 (+) and pin 18 (-) on harness J5 and do a check of the value of the current, which must be between 350 and 630 mA (Ref. ASM 73-25/16).

(a) If the current is out of the specified values:
- disconnect the channel A harness from the HCU-THRUST REV (4101KS) and do an insulation and continuity check of the harness J5 and thrust reverser harness between the ECU and the HCU connector A.

1 If there is a fault:
- repair or replace the harness J5 or the thrust reverser harness or the junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified values:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message HCU (TRPV), J5, ECU, this indicates that the fault was intermittent and is no longer present:
- do a check of the harness J5, the thrust reverser harness and the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of the connectors for looseness, contamination, bent pins.

(3) If damage is found:
- clean, retighten or replace the harness as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(4) If no damage is found:
- no additional action is required.

(5) If the fault message HCU (TRPV), J5, ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the harness J5 and the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-828

Failure of the Control of the Thrust-Reverser HCU Pressurizing-Valve through the Channel B on Engine 2

1. Possible Causes

R - HCU-THRUST REV (4101KS)
R - ECU (4000KS)
R - harness

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-50-00-210-001	Visual Inspection of the Power Plant Wire Harness
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated when the ECU detects an open circuit or a short to ground on the solenoid of the HCU pressurizing valve on channel B or on associated electrical wiring.

(1) If the test gives the maintenance message HCU (TRPV), J6, ECU:
- disconnect the harness J6 from the ECU (4000KS),
- apply 28VDC between pin 17 (+) and pin 18 (-) on harness J6 and do a check of the value of the current, which must be between 350 and 630 mA (Ref. ASM 73-25/16).

(a) If the current is out of the specified values:
- disconnect the channel B harness from the HCU-THRUST REV (4101KS) and do an insulation and continuity check of the harness J6 and thrust reverser harness between the ECU and the HCU connector A.

1 If there is a fault:
- repair or replace the harness J6 or the thrust reverser harness or the junction box (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(b) If the current is in the specified values:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message HCU (TRPV), J6, ECU, this indicates that the fault was intermittent and is no longer present:
- do a check of the harness J6, the thrust reverser harness and the junction box for absence of damage (Ref. AMM TASK 71-50-00-210-001),
- do a check of the connectors for looseness, contamination, bent pins.

(a) If damage is found:
- clean, retighten or replace the harness as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

(b) If no damage is found:
- no additional action is required.

(3) If the fault message HCU (TRPV), J6, ECU becomes repetitive and is never confirmed during the operational test of the thrust reverser:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the fault continues:
- replace the harness J6 and the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-835

Thrust-Reverser Blocker-Door Stow and Deploy Switches Feedback Disagree on Engine 1

1. Possible Causes

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-839	Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 1
78-31-00-810-843	Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 1
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-17-000-001	Removal of the Blocker Door Deploy Switch (4103KS1,4103KS2)
AMM 78-31-17-400-001	Installation of the Blocker Door Deploy Switch (4103KS1,4103KS2)

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if the ECU detects a disagreement between the blocker doors position indicated by the stow switches and the position indicated by the deploy switches through each ECU channel. The ECU cannot isolate the switches that are faulty. This message is triggered if dual failure condition is present.

(1) If the test gives the maintenance messages STOW SW, J5/J6, ECU and DEPL SW, J5/J6, ECU:
- do the related trouble shooting procedures (Ref. TASK 78-31-00-810-839) and (Ref. TASK 78-31-00-810-843).

NOTE : Do a check of the deploy-switches control levers for free operation. Seizure of the control lever shaft may trigger wrong position indication of the blocker doors.
If damage is found:
- replace hardware (Ref. AMM TASK 78-31-17-000-001) and (Ref. AMM TASK 78-31-17-400-001) or apply CMM 78-31-17 repair No.1.

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-836

Thrust-Reverser Blocker-Door Stow and Deploy Switches Feedback Disagree on Engine 2

1. Possible Causes

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-840	Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 2
78-31-00-810-844	Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 2
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-17-000-001	Removal of the Blocker Door Deploy Switch (4103KS1,4103KS2)
AMM 78-31-17-400-001	Installation of the Blocker Door Deploy Switch (4103KS1,4103KS2)

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if the ECU detects a disagreement between the blocker doors position indicated by the stow switches and the position indicated by the deploy switches through each ECU channel. The ECU cannot isolate the switches that are faulty. This message is triggered if dual failure condition is present.

(1) If the test gives the maintenance messages STOW SW, J5/J6, ECU and DEPL SW, J5/J6, ECU:
- do the related trouble shooting procedures (Ref. TASK 78-31-00-810-840) and (Ref. TASK 78-31-00-810-844).

NOTE : Do a check of the deploy-switches control levers for free operation. Seizure of the control lever shaft may trigger wrong position indication of the blocker doors.
If damage is found:
- replace hardware (Ref. AMM TASK 78-31-17-000-001) and (Ref. AMM TASK 78-31-17-400-001) or apply CMM 78-31-17 repair No.1.

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-839

Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 1

1. Possible Causes

- SW-BLOCKER DOOR STOW, UPPER R (4104KS1)
- SW-BLOCKER DOOR STOW, LOWER R (4104KS2)
- SW-BLOCKER DOOR STOW, LOWER L (4104KS3)
- SW-BLOCKER DOOR STOW, UPPER L (4104KS4)
- ECU (4000KS)
- thrust reverser harness
- harness J5
- harness J6

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-18-000-040	Removal Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-18-400-040	Installation Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
AWM 71-51-05	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if there is a disagreement between channel A and channel B on the stow switch signal of the thrust reverser blocker doors. Most probable cause is stow switches or a harness failure.

(1) If the test gives the maintenance message STOW SW, J5/J6, ECU on the channel A or B:
- make sure that the thrust reverser blocker doors are in the stowed position,
- disconnect the harnesses J5 and J6 from the ECU (4000KS),
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 24 and 23 (<5 ohms)
  . pins 24 and 2 (>10 megohms)
  . pins 24 and 11 (>10 megohms)
  . pins 2 and 11 (>10 megohms)
  . pin 24 and the ground (>10 megohms)
  . pin 23 and the ground (>10 megohms).

(a) If the resistance values are out of the specified limits:
- with the thrust reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch (Ref. AWM 71-51-05) between:
  . pins 4 and 7 (>10 megohms)
  . pins 4 and 9 (<5 ohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (>10 megohms)
  . pins 2 and 5 (<5 ohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

1 If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS) (Ref. AWM 71-51-05),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the resistance values are in the specified limits:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001)
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 24 and 23 (>10 megohms)
  . pins 24 and 2 (<5 ohms)
  . pins 24 and 11 (>10 megohms)
  . pins 2 and 11 (>10 megohms)
  . pin 24 and the ground (>10 megohms)
  . pin 23 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- with the thrust reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch between:
  . pins 4 and 7 (>10 megohms)
  . pins 4 and 9 (<5 ohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (>10 megohms)
  . pins 2 and 5 (<5 ohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If the resistance values are in the specified limits:
- with the thrust reverser blocker doors deployed, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch (Ref. AWM 71-51-05) between:
  . pins 4 and 7 (<5 ohms)
  . pins 4 and 9 (>10 megohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (<5 ohms)
  . pins 2 and 5 (>10 megohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message STOW SW, J5/J6, ECU:

(a) Do a check of the connectors of the thrust reverser harness, harnesses J5 and J6 for looseness, contamination, and bent pins.

1 If damage is found:
- retighten, clean or repair as required (Ref. AMM TASK 78-31-42-210-041).

(b) Do a check of the harness routing and look for chafing or cut in the harness envelope.

1 If damage is found:
- replace the defective thrust reverser harness or harness J5 or harness J6 (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found and the fault continues while the fault message is never confirmed during the thrust reverser test:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

a If the fault continues:
- replace successively the harness J5 then the harness J6 then the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

b If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-840

Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 2

1. Possible Causes

- SW-BLOCKER DOOR STOW, UPPER R (4104KS1)
- SW-BLOCKER DOOR STOW, LOWER R (4104KS2)
- SW-BLOCKER DOOR STOW, LOWER L (4104KS3)
- SW-BLOCKER DOOR STOW, UPPER L (4104KS4)
- ECU (4000KS)
- thrust reverser harness
- harness J5
- harness J6

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-18-000-040	Removal Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-18-400-040	Installation Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
AWM 71-51-05	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if there is a disagreement between channel A and channel B on the stow switch signal of the thrust reverser blocker doors. Most probable cause is stow switches or a harness failure.

(1) If the test gives the maintenance message STOW SW, J5/J6, ECU on the channel A or B:
- make sure that the thrust reverser blocker doors are in the stowed position,
- disconnect the harnesses J5 and J6 from the ECU (4000KS),
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 24 and 23 (<5 ohms)
  . pins 24 and 2 (>10 megohms)
  . pins 24 and 11 (>10 megohms)
  . pins 2 and 11 (>10 megohms)
  . pin 24 and the ground (>10 megohms)
  . pin 23 and the ground (>10 megohms).

(a) If the resistance values are out of the specified limits:
- with the thrust reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch (Ref. AWM 71-51-05) between:
  . pins 4 and 7 (>10 megohms)
  . pins 4 and 9 (<5 ohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (>10 megohms)
  . pins 2 and 5 (<5 ohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

1 If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS) (Ref. AWM 71-51-05),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the resistance values are in the specified limits:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001)
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 24 and 23 (>10 megohms)
  . pins 24 and 2 (<5 ohms)
  . pins 24 and 11 (>10 megohms)
  . pins 2 and 11 (>10 megohms)
  . pin 24 and the ground (>10 megohms)
  . pin 23 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- with the thrust reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch between:
  . pins 4 and 7 (>10 megohms)
  . pins 4 and 9 (<5 ohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (>10 megohms)
  . pins 2 and 5 (<5 ohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If the resistance values are in the specified limits:
- with the thrust reverser blocker doors deployed, disconnect the harnesses J5 and J6 from each stow switch,
- do a resistance check on each stow switch (Ref. AWM 71-51-05) between:
  . pins 4 and 7 (<5 ohms)
  . pins 4 and 9 (>10 megohms)
  . pin 4 and the ground (>10 megohms)
  . pins 4 and 12 (>10 megohms)
  . pins 2 and 3 (<5 ohms)
  . pins 2 and 5 (>10 megohms)
  . pin 2 and the ground (>10 megohms)
  . pins 2 and 1 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message STOW SW, J5/J6, ECU:

(a) Do a check of the connectors of the thrust reverser harness, harnesses J5 and J6 for looseness, contamination, and bent pins.

1 If damage is found:
- retighten, clean or repair as required (Ref. AMM TASK 78-31-42-210-041).

(b) Do a check of the harness routing and look for chafing or cut in the harness envelope.

1 If damage is found:
- replace the defective thrust reverser harness or harness J5 or harness J6 (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If nothing is found and the fault continues while the fault message is never confirmed during the thrust reverser test:
- replace the defective:
  . SW-BLOCKER DOOR STOW, UPPER R (4104KS1) or/and
  . SW-BLOCKER DOOR STOW, LOWER R (4104KS2) or/and
  . SW-BLOCKER DOOR STOW, LOWER L (4104KS3) or/and
  . SW-BLOCKER DOOR STOW, UPPER L (4104KS4) (Ref. AMM TASK 78-31-18-000-040) and (Ref. AMM TASK 78-31-18-400-040).

a If the fault continues:
- replace successively the harness J5 then the harness J6 then the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

b If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-843

Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 1

1. Possible Causes

- SW-BLOCKER DOOR DEPLOY, L (4103KS1)
- SW-BLOCKER DOOR DEPLOY, R (4103KS2)
- ECU (4000KS)
- thrust reverser harness
- harness J5
- harness J6

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 71-51-43-000-004	Removal of the ECU (Channel B) to Thrust Reverser Junction Box Harnesses (4214KS)
	AMM 71-51-43-000-044	Removal of the Thrust Reverser (Channel A and B) Harness (4200KS)
	AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
	AMM 71-51-43-400-004	Installation of the ECU (Channel B) to thrust Reverser Junction Box Harnesses (4214KS)
	AMM 71-51-43-400-044	Installation of the Thrust Reverser (Channel A and B) Harness (4200KS)
	AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
	AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
	AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
	AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
	AMM 78-31-17-000-040	Removal of the Blocker Door Deploy Switch (4103KS1,4103KS2)
R R	AMM 78-31-17-210-001	Detailed Visual Inspection of the Deploy Switches and Triggers
	AMM 78-31-17-400-040	Installation of the Blocker Door Deploy Switch (4103KS1,4103KS2)
	AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
	AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
	ASM 73-25/16	
	AWM 71-51-05	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if there is a disagreement between channel A and channel B on the thrust-reverser blocker-door deploy switches signal. Most probable cause is deploy switches or a harness failure.

(1) If the test gives the maintenance message DEPL SW, J5/J6, ECU on the channel A or B:
- make sure that the thrust reverser blocker doors are in the stowed position,
- disconnect the harnesses J5 and J6 from the ECU (4000KS),
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 21 and 22 (>10 megohms)
  . pins 21 and 11 (>10 megohms)
  . pin 21 and the ground (>10 megohms).

(a) If the resistance values are out of the specified limits:
- with the thrust-reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each deploy switch,
- do a resistance check on each deploy switch (Ref. AWM 71-51-05) between:
  . pins 3 and 2 (>10 megohms)
  . pins 4 and 5 (>10 megohms)
  . pins 4 and 1 (>10 megohms)
  . pin 4 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
R - Inspect the deploy switches levers (Ref. AMM TASK 78-31-17-
R 210-001).
- If the finding do not indicate mechanical problem, replace the defective:
  . SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
  . SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the deploy switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the resistance values are in the specified limits:
- do a manual deployment of the thrust-reverser blocker doors (Ref. AMM TASK 78-32-41-860-001)
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 21 and 22 (<5 ohms)
  . pins 21 and 11 (>10 megohms)
  . pin 21 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- with the thrust-reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each deploy switch,
- do a resistance check on each deploy switch (Ref. AWM 71-51-05) between:
  . pins 3 and 2 (<5 ohms)
  . pins 4 and 5 (<5 ohms)
  . pins 4 and 1 (>10 megohms)
  . pin 4 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
R - Inspect the deploy switches levers (Ref. AMM TASK 78-31-
R 17-210-001).
- If the finding do not indicate mechanichal problem, replace the defective:
  . SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
  . SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the deploy switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message DEPL SW, J5/J6, ECU:
- do a check of the connectors of the thrust reverser harness and harnesses J5 and J6 for looseness, contamination, and bent pins.

(a) If damage is found:
- retighten, clean or repair as required (Ref. AMM TASK 78-31-42-210-041).

(b) If nothing is found:
- do a check of the harness routing and look for chafing or cut in the harness envelope.

1 If damage is found:
- replace the defective thrust reverser harness or harness J5 or harness J6 (Ref. AMM TASK 71-51-43-000-044) and (Ref. AMM TASK 71-51-43-400-044) (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004) .

2 If nothing is found and the fault continues while the fault message is never confirmed during the thrust reverser test:
- Inspect the deploy switches levers (Ref. AMM TASK 78-31-17-210-001).
- If the finding do not indicate mechanical problem, replace the defective:
. SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
. SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

a If the fault continues:
- replace successively the harness J5 then the harness J6 then the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004) (Ref. AMM TASK 71-51-43-000-044) and (Ref. AMM TASK 71-51-43-400-044).

b If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-844

Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 2

1. Possible Causes

- SW-BLOCKER DOOR DEPLOY, L (4103KS1)
- SW-BLOCKER DOOR DEPLOY, R (4103KS2)
- ECU (4000KS)
- thrust reverser harness
- harness J5
- harness J6

2. Job Set-up Information

A. Referenced Information

REFERENCE		DESIGNATION
AMM	71-51-43-000-004	Removal of the ECU (Channel B) to Thrust Reverser Junction Box Harnesses (4214KS)
AMM	71-51-43-000-044	Removal of the Thrust Reverser (Channel A and B) Harness (4200KS)
AMM	71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM	71-51-43-400-004	Installation of the ECU (Channel B) to thrust Reverser Junction Box Harnesses (4214KS)
AMM	71-51-43-400-044	Installation of the Thrust Reverser (Channel A and B) Harness (4200KS)
AMM	71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM	73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM	73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM	78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM	78-31-17-000-040	Removal of the Blocker Door Deploy Switch (4103KS1,4103KS2)
R AMM R	78-31-17-210-001	Detailed Visual Inspection of the Deploy Switches and Triggers
AMM	78-31-17-400-040	Installation of the Blocker Door Deploy Switch (4103KS1,4103KS2)
AMM	78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
AMM	78-32-41-860-001	Manual Deployment of the Blocker Door
ASM	73-25/16	
AWM	71-51-05	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. This fault message is generated if there is a disagreement between channel A and channel B on the thrust-reverser blocker-door deploy switches signal. Most probable cause is deploy switches or a harness failure.

(1) If the test gives the maintenance message DEPL SW, J5/J6, ECU on the channel A or B:
- make sure that the thrust reverser blocker doors are in the stowed position,
- disconnect the harnesses J5 and J6 from the ECU (4000KS),
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 21 and 22 (>10 megohms)
  . pins 21 and 11 (>10 megohms)
  . pin 21 and the ground (>10 megohms).

(a) If the resistance values are out of the specified limits:
- with the thrust-reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each deploy switch,
- do a resistance check on each deploy switch (Ref. AWM 71-51-05) between:
  . pins 3 and 2 (>10 megohms)
  . pins 4 and 5 (>10 megohms)
  . pins 4 and 1 (>10 megohms)
  . pin 4 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
R - Inspect the deploy switches levers (Ref. AMM TASK 78-31-17-
R 210-001).
- If the finding do not indicate mechanical problem, replace the defective:
  . SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
  . SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the deploy switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(b) If the resistance values are in the specified limits:
- do a manual deployment of the thrust-reverser blocker doors (Ref. AMM TASK 78-32-41-860-001)
- do a resistance check of the harnesses J5 and J6 (Ref. AWM 71-51-05) between:
  . pins 21 and 22 (<5 ohms)
  . pins 21 and 11 (>10 megohms)
  . pin 21 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- with the thrust-reverser blocker doors in the stowed position, disconnect the harnesses J5 and J6 from each deploy switch,
- do a resistance check on each deploy switch (Ref. AWM 71-51-05) between:
  . pins 3 and 2 (<5 ohms)
  . pins 4 and 5 (<5 ohms)
  . pins 4 and 1 (>10 megohms)
  . pin 4 and the ground (>10 megohms).

a If the resistance values are out of the specified limits:
R - Inspect the deploy switches levers (Ref. AMM TASK 78-31-
R 17-210-001).
- If the finding do not indicate mechanical problem, replace the defective:
  . SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
  . SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

b If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the deploy switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

c If damage is found:
- repair or replace as required.

d If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

2 If the resistance values are in the specified limits:
- do a continuity and insulation check of the thrust reverser and harnesses J5 and J6 between the stow switches including the junction box (4100KS) (Ref. ASM 73-25/16),
- do a visual check of each connector for correct condition.

a If damage is found:
- repair or replace as required.

b If nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message DEPL SW, J5/J6, ECU:
- do a check of the connectors of the thrust reverser harness and harnesses J5 and J6 for looseness, contamination, and bent pins.

(a) If damage is found:
- retighten, clean or repair as required (Ref. AMM TASK 78-31-42-210-041).

(b) If nothing is found:
- do a check of the harness routing and look for chafing or cut in the harness envelope.

1 If damage is found:
- replace the defective thrust reverser harness or harness J5 or harness J6 (Ref. AMM TASK 71-51-43-000-044) and (Ref. AMM TASK 71-51-43-400-044) (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004).

2 If nothing is found and the fault continues while the fault message is never confirmed during the thrust reverser test:
R - Inspect the deploy switches levers (Ref. AMM TASK 78-31-17-
R 210-001).
- If the finding do not indicate mechanical problem, replace the defective:
. SW-BLOCKER DOOR DEPLOY, L (4103KS1) or/and
. SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-040) and (Ref. AMM TASK 78-31-17-400-040).

a If the fault continues:
- replace successively the harness J5 then the harness J6 then the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004) (Ref. AMM TASK 71-51-43-000-044) and (Ref. AMM TASK 71-51-43-400-044).

b If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-845

Loss of the Signal of the Thrust-Reverser Blocker-Door Deploy/Stow Switches on Engine 1

1. Possible Causes

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-839	Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 1
78-31-00-810-843	Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 1
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message DPLSTW SW J5/J6, ECU through the channel A or B:

NOTE : A fault has been detected which cannot be isolated to the thrust-reverser blocker-door deploy and/or stow-switch circuits

- do the procedures as given with the CFDS messages below:
  . DEPL SW, J5/J6, ECU (Ref. TASK 78-31-00-810-843) and
  . STOW SW, J5/J6, ECU (Ref. TASK 78-31-00-810-839).

TASK 78-31-00-810-846

Loss of the Signal of the Thrust-Reverser Blocker-Door Deploy/Stow Switches on Engine 2

1. Possible Causes

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-840	Thrust-Reverser Blocker-Door Stow-Switches Feedback Disagree on Engine 2
78-31-00-810-844	Thrust-Reverser Blocker-Door Deploy-Switches Feedback Disagree on Engine 2
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message DPLSTW SW J5/J6, ECU through the channel A or B:

NOTE : A fault has been detected which cannot be isolated to the thrust-reverser blocker-door deploy and/or stow-switch circuits

- do the procedures as given with the CFDS messages below:
  . DEPL SW, J5/J6, ECU (Ref. TASK 78-31-00-810-844) and
  . STOW SW, J5/J6, ECU (Ref. TASK 78-31-00-810-840).

TASK 78-31-00-810-847

Stow Time Too Long on Engine 1 Thrust Reverser

1. Possible Causes

- shut-off valve filter
- HCU filter
- CHECK VALVE-ENG 1 THR REV, G
- HCU return line
- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 29-11-35-000-001	Removal of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 29-11-35-400-001	Installation of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-210-003	Detailed Visual Inspection of the Door Actuator
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
AMM 78-37-51-600-002	Replacement of the Thrust Reverser Hydraulic Isolation Valve Filter

3. Fault Confirmation

A. Test

CAUTION : STAY AWAY FROM THE TRAVEL RANGE OF THE BLOCKER DOORS DURING THE TEST.

(1) Do an operational test of the thrust reverser system for the FADEC 1A (Ref. AMM TASK 78-31-00-710-042). Visually monitor the blocker doors operation during the test.

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the filter clogging pop out indicator of the reverser shut-off valve filter.

(a) If the clogging pop out indicator is extended:
- replace the shut-off valve filter (Ref. AMM TASK 78-37-51-600-002).

(b) If the clogging pop out indicator is not extended:
- do a check of the HCU filter clogging pop out indicator.

1 If the HCU filter clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

2 If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM1) at the pylon connection,
- do an inspection for blockage or damage.

a If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 1 THR REV, G (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or HCU return line.

b If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

c If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),
- with the blocker doors in the deployed position, do a visual inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

(a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
  . ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
  . ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the clogging pop out indicator of the HCU filter.

(a) If the clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM1) at the pylon connection,
- do an inspection for blockage or damage.

1 If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 1 THR REV, G (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or the HCU return line.

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

3 If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:

- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:

R - do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),

R - with the blocker doors in the deployed position, do a visual

R inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

R (a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
. ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
. ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
. ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
. ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

**ON A/C ALL

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-848

Stow Time Too Long on Engine 2 Thrust Reverser

1. Possible Causes

- shut-off valve filter
- HCU filter
- CHECK VALVE-ENG 2 THR REV, Y
- HCU return line
- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE		DESIGNATION
AMM	29-11-35-000-001	Removal of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM	29-11-35-400-001	Installation of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM	73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM	73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM	78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM	78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM	78-31-41-210-003	Detailed Visual Inspection of the Door Actuator
AMM	78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM	78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM	78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM	78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM	78-32-41-860-001	Manual Deployment of the Blocker Door
AMM	78-37-51-600-002	Replacement of the Thrust Reverser Hydraulic Isolation Valve Filter

3. Fault Confirmation

A. Test

CAUTION : STAY AWAY FROM THE TRAVEL RANGE OF THE BLOCKER DOORS DURING THE TEST.

(1) Do an operational test of the thrust reverser system for the FADEC 2A (Ref. AMM TASK 78-31-00-710-042). Visually monitor the blocker doors operation during the test.

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the filter clogging pop out indicator of the reverser shut-off valve filter.

(a) If the clogging pop out indicator is extended:
- replace the shut-off valve filter (Ref. AMM TASK 78-37-51-600-002).

(b) If the clogging pop out indicator is not extended:
- do a check of the HCU filter clogging pop out indicator.

1 If the HCU filter clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

2 If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM2) at the pylon connection,
- do an inspection for blockage or damage.

a If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 2 THR REV, Y (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or HCU return line.

b If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

c If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),
- with the blocker doors in the deployed position, do a visual inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

(a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
  . ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
  . ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the clogging pop out indicator of the HCU filter.

(a) If the clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM2) at the pylon connection,
- do an inspection for blockage or damage.

1 If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 2 THR REV, Y (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or the HCU return line.

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

3 If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:

- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:

R - do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),

R - with the blocker doors in the deployed position, do a visual
R inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

R (a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
. ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
. ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
. ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
. ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

**ON A/C ALL

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-851

Stow Time Too Long on Engine 1 Thrust Reverser

1. Possible Causes

- shut-off valve filter
- HCU filter
- CHECK VALVE-ENG 1 THR REV, G
- HCU return line
- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 29-11-35-000-001	Removal of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 29-11-35-400-001	Installation of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-210-003	Detailed Visual Inspection of the Door Actuator
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
AMM 78-37-51-600-002	Replacement of the Thrust Reverser Hydraulic Isolation Valve Filter

3. Fault Confirmation

A. Test

CAUTION : STAY AWAY FROM THE TRAVEL RANGE OF THE BLOCKER DOORS DURING THE TEST.

(1) Do an operational test of the thrust reverser system for the FADEC 1B (Ref. AMM TASK 78-31-00-710-042). Visually monitor the blocker doors operation during the test.

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the filter clogging pop out indicator of the reverser shut-off valve filter.

(a) If the clogging pop out indicator is extended:
- replace the shut-off valve filter (Ref. AMM TASK 78-37-51-600-002).

(b) If the clogging pop out indicator is not extended:
- do a check of the HCU filter clogging pop out indicator.

1 If the HCU filter clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

2 If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM1) at the pylon connection,
- do an inspection for blockage or damage.

a If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 1 THR REV, G (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or HCU return line.

b If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

c If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),
- with the blocker doors in the deployed position, do a visual inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

(a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
  . ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
  . ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the clogging pop out indicator of the HCU filter.

(a) If the clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM1) at the pylon connection,
- do an inspection for blockage or damage.

1 If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 1 THR REV, G (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or the HCU return line.

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

3 If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:

- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:

R - do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),

R - with the blocker doors in the deployed position, do a visual
R inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

R (a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
. ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
. ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
. ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
. ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

**ON A/C ALL

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-852

Stow Time Too Long on Engine 2 Thrust Reverser

1. Possible Causes

- shut-off valve filter
- HCU filter
- CHECK VALVE-ENG 2 THR REV, Y
- HCU return line
- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 29-11-35-000-001	Removal of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 29-11-35-400-001	Installation of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-210-003	Detailed Visual Inspection of the Door Actuator
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door
AMM 78-37-51-600-002	Replacement of the Thrust Reverser Hydraulic Isolation Valve Filter

3. Fault Confirmation

A. Test

CAUTION : STAY AWAY FROM THE TRAVEL RANGE OF THE BLOCKER DOORS DURING THE TEST.

(1) Do an operational test of the thrust reverser system for the FADEC 2B (Ref. AMM TASK 78-31-00-710-042). Visually monitor the blocker doors operation during the test.

4. Fault Isolation

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the filter clogging pop out indicator of the reverser shut-off valve filter.

(a) If the clogging pop out indicator is extended:
- replace the shut-off valve filter (Ref. AMM TASK 78-37-51-600-002).

(b) If the clogging pop out indicator is not extended:
- do a check of the HCU filter clogging pop out indicator.

1 If the HCU filter clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

2 If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM2) at the pylon connection,
- do an inspection for blockage or damage.

a If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 2 THR REV, Y (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or HCU return line.

b If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

c If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),
- with the blocker doors in the deployed position, do a visual inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

(a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
  . ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
  . ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

R **ON A/C 227-227, 229-238, 276-281, 476-478,

A. The fault message HCU is generated if the thrust reverser stow time is greater than 8 seconds between the setting of the throttle from reverse to forward idle and the locking of the reverser blocker doors.

(1) If all blocker doors stow simultaneously but slowly during the test:
- do a check of the clogging pop out indicator of the HCU filter.

(a) If the clogging pop out indicator is extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the clogging pop out indicator is not extended:
- remove the hydraulic return line between the HCU and the check valve (3010KM2) at the pylon connection,
- do an inspection for blockage or damage.

1 If there is blockage or damage:
- clean or replace the CHECK VALVE-ENG 2 THR REV, Y (Ref. AMM TASK 29-11-35-000-001) and (Ref. AMM TASK 29-11-35-400-001) or the HCU return line.

2 If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

3 If the fault continues and slow reverser operation in the stow sequence does not exceed 8 seconds during the test:

- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the blocker doors do not stow simultaneously during the test:
- do a manual deployment of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001),
- with the blocker doors in the deployed position, do a visual inspection of the structure and hydraulic lines (Ref. AMM TASK 78-31-41-210-003).

(a) If you find damage:
- replace the damaged parts.

(b) If nothing is found and if one or more of the doors is (are) identified to move slower than the other ones during the test:
- replace the defective:
  . ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2) or/and
  . ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3) or/and
  . ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4) (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

(c) If nothing is found:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

**ON A/C ALL

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-853

Failure of the Hydraulic Pressurizing Valve on Engine 1

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- HCU pressure switch (4102KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

R **ON A/C 201-205, 227-227, 229-240, 276-283, 476-480,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (1B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).
If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.

If warning ENG 1 REVERSER FAULT and maintenance message HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 227-227, 229-239, 241-299, 426-478, 481-499, 503-549,
R 551-599, 701-749,
Post SB 72-1017 For A/C 201-205,
R Post SB 73-1052 For A/C 227-227,229-229,231-239,276-282,
R Post SB 73-1058 For A/C 201-205,227-227,229-239,276-283,476-478,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (1B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

**ON A/C ALL

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected not open when reverse is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch (4102KS):
- if the switch is closed, there is no pressure,
- if the switch is open, the valve is pressurized.

(1) If the test does not give the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- no further action is required.

(a) If the fault becomes repetitive:
- do the trouble shooting as if the maintenance message was confirmed on test.

(2) If the test does not give the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test gives the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(4) If the test gives the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-854

Failure of the Hydraulic Pressurizing Valve on Engine 2

1. Possible Causes

- HCU-THRUST REV (4101KS)
- ECU (4000KS)
- HCU pressure switch (4102KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

R **ON A/C 201-205, 227-227, 229-240, 276-283, 476-480,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (2B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).
If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.

If warning ENG 2 REVERSER FAULT and maintenance message HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 227-227, 229-239, 241-299, 426-478, 481-499, 503-549,
R 551-599, 701-749,
R Post SB 73-1058 For A/C 201-205,227-227,229-239,276-283,476-478,

A. Test

(1) Make sure that the thrust reverser system is not mechanically deactivated (Inhibition pin on HCU).

(2) Do the operational test of the thrust reverser system (2B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

**ON A/C ALL

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected not open when reverse is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch (4102KS):
- if the switch is closed, there is no pressure,
- if the switch is open, the valve is pressurized.

(1) If the test does not give the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- no further action is required.

(a) If the fault becomes repetitive:
- do the trouble shooting as if the maintenance message was confirmed on test.

(2) If the test does not give the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test gives the maintenance message HCU (TRPV), HYD and the thrust reverser blocker doors deploy and stow normally:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(4) If the test gives the maintenance message HCU (TRPV), HYD and the blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

TASK 78-31-00-810-855

Failure of the Thrust Reverser Hydraulic Isolation Valve in the Closed Position on Engine 1

1. Possible Causes

- STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG1 (3EG1)
- RELAY-THRUST REVERSER LOCKING POWER, ENG1 (2EG1)
- VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG1 (5OEG1)
- HCU-THRUST REV (41O1KS)
- C/B-SAFETY CIRCUIT BREAKER OPEN (1EG1)
- C/B-ENGINE/ENG1/OIL/PRESS (2EN1)
- SEC-1 (1CE1)
- SEC-2 (1CE2)
- HCU pressure switch (41O2KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (41O2KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (41O2KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-37-51-000-001	Removal of the Thrust Reverser Hydraulic Isolation Valve
AMM 78-37-51-400-001	Installation of the Thrust Reverser Hydraulic Isolation Valve
ASM 78-37/01	
AWM 78-36-03	

3. Fault Confirmation

A. Make sure that this(these) circuit breaker(s) is(are) closed:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG1/REV/LOCK	1EG1	N44
121VU	ENGINE/ENG1/OIL/PRESS	2EN1	N40

**ON A/C 240-240, 282-283, 479-480,

B. Test

(1) Do the operational test of the thrust reverser system (1A and 1B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).
If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.
If warning ENG 1 REVERSER FAULT and maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 239-239, 241-275, 282-299, 426-475, 481-499, 503-549,
R 551-599, 701-749,
Post SB 73-1058 For A/C 282-283,

B. Test

(1) Do the operational test of the thrust reverser system (1A and 1B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

4. Fault Isolation

A. This fault message is generated if the ECU detects no pressurization of the thrust reverser HCU after a deploy command of the thrust reverser. This indicates either a thrust reverser isolation valve failure to open or a HCU failure. The ECU cannot determine which one of the two items of equipment has failed as the thrust reverser isolation valve and the HCU are installed in series, while the ECU uses the HCU pressure switch for monitoring (Ref. ASM 78-37/01).

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test does not give the maintenance message HCU, TRSOV, HYD but the fault message is shown again on the subsequent flights:
- replace the STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG1 (3EG1).

(a) If the fault continues:
- replace the RELAY-THRUST REVERSER LOCKING POWER, ENG1 (2EG1).

(2) If the test gives the maintenance message HCU, TRSOV, HYD or the thrust reverser blocker doors do not deploy normally or stow during the test:
- replace the STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG1 (3EG1).

(a) If the fault continues:
- replace the RELAY-THRUST REVERSER LOCKING POWER, ENG1 (2EG1).

(b) If the fault continues:
- make sure that you have correctly exited the FADEC menu mode,
- disconnect the electrical connector from the thrust reverser isolation valve (50EG1),
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- set the engine 1 throttle control lever to the reverse position. Make sure that the throttle control lever of the opposite engine is in the idle position,
- do a check for ground at pin A/2 of the thrust reverser isolation valve (50EG1).

1 If there is no ground:
- repair the wiring or the ground terminal 480VN1 (Ref. AWM 78-36-03).

2 If there is ground:
- do a check for 115VAC between pins 1 and 2 of the connector on the harness side.

a If there is 115VAC:
- replace the VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG1 (5OEG1) (Ref. AMM TASK 78-37-51-000-001) and (Ref. AMM TASK 78-37-51-400-001).
If the fault continues:
- replace the HCU-THRUST REV (41O1KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

b If there is no 115VAC:
- on the overhead panel 5OVU, push the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend goes off,
- do a continuity check of the electrical wiring between the thrust reverser isolation valve (5OEG1) pin A/1 and the power relay 2EG1 pin A/A2.

c If the wiring is not correct:
- repair as required.

d If the wiring is correct:
- remove the static relay (3EG1) and the power relay (2EG1) from their base on 12OVU.
- on the overhead panel 5OVU, push and release the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend comes on,
- with the engine 1 throttle control lever still in reverser position, do a check for 115VAC at pin A/B1 of the relay base 2EG1.

e If there is no 115VAC:
- repair the wiring or replace the C/B-SAFETY CIRCUIT BREAKER OPEN (1EG1).

f If there is 115VAC:
- do a check for 28VDC at pin A/X of the relay base 3EG1.

g If there is no 28VDC:
- repair the wiring or replace the C/B-ENGINE/ENG1/OIL/PRESS (2EN1).

h If there is 28VDC:
- do a check for ground at pin A/X2 of the relay base 2EG1 and pin A/Z of the relay base 3EG1.

i If there is no ground:
- repair the wiring.

j If there is ground:
- on the overhead panel 5OVU, push the P/BSW-ENG/FADEC GND PWR/1 (7KS1) the ON legend goes off,
- set the engine 1 throttle control lever to idle position,
- do a check of the wiring continuity between the static relay (3EG1), the SEC1 (1CE1) and the SEC2 (1CE2).

k If the wiring is correct:
- make sure that there is no ground at pin AB/15E on the SEC1 (1CE1) and the SEC2 (1CE2) (Ref. ASM 78-37/01).
- look for any FCDC or radio altimeter failure (on the Post Flight Report (PFR)) causing SEC output malfunction (TSM chapter 27).

l If no external failure to the SECs is found:
- replace successively the SEC-1 (1CE1) then the SEC-2 (1CE2) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

(3) If thrust reverser operation (deploy and stow) was normal during aircraft operation and during the test but the test gives the maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(a) If the fault continues:
- replace the HCU (4101KS1) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

B. Do the test given in Para. 3.B.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-856

Failure of the Thrust Reverser Hydraulic Isolation Valve in the Closed Position on Engine 2

1. Possible Causes

- STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG2 (3EG2)
- RELAY-THRUST REVERSER LOCKING POWER, ENG2 (2EG2)
- VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG2 (5OEG2)
- HCU-THRUST REV (41O1KS)
- C/B-SAFETY CIRCUIT BREAKER OPEN (1EG2)
- C/B-ENGINE/ENG2/OIL/PRESS (2EN2)
- SEC-1 (1CE1)
- SEC-3 (1CE3)
- HCU pressure switch (41O2KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-00-710-043	Operational Test of the Thrust Reverser without CFDS - Engine Running
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (41O2KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (41O2KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-37-51-000-001	Removal of the Thrust Reverser Hydraulic Isolation Valve
AMM 78-37-51-400-001	Installation of the Thrust Reverser Hydraulic Isolation Valve
ASM 78-37/01	
AWM 78-36-03	

3. Fault Confirmation

A. Make sure that this(these) circuit breaker(s) is(are) closed:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG2/REV/LOCK	1EG2	N45
121VU	ENGINE/ENG2/OIL/PRESS	2EN2	N42

**ON A/C 240-240, 282-283, 479-480,

B. Test

(1) Do the operational test of the thrust reverser system (2A and 2B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

NOTE : If the test gives the maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD, do the test again with a hydraulic ground cart or do the operational test of the thrust reverser without CFDS with engine running (Ref. AMM TASK 78-31-00-710-043).
If you do the test with an engine ground run, enter a new flight number in the FMGC menu via the MCDU keypad to get a Post Flight Report (PFR) after the test.
If warning ENG 2 REVERSER FAULT and maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD are shown during the test, do the following trouble shooting. If they are not shown during the test or are not recorded in the Post Flight Report (PFR) after the ground run, no further action is required.

R **ON A/C 201-225, 239-239, 241-275, 282-299, 426-475, 481-499, 503-549,
R 551-599, 701-749,
Post SB 73-1058 For A/C 282-283,

B. Test

(1) Do the operational test of the thrust reverser system (2A and 2B) (MENU mode test) (Ref. AMM TASK 78-31-00-710-042). Make sure that the hydraulic pressure is correct during the test. The pressure must not drop below the advisory threshold.

R **ON A/C 201-225, 239-275, 282-299, 426-475, 479-499, 503-549, 551-599,
R 701-749,

4. Fault Isolation

A. This fault message is generated if the ECU detects no pressurization of the thrust reverser HCU after a deploy command of the thrust reverser. This indicates either a thrust reverser isolation valve failure to open or a HCU failure. The ECU cannot determine which one of the two items of equipment has failed as the thrust reverser isolation valve and the HCU are installed in series, while the ECU uses the HCU pressure switch for monitoring (Ref. ASM 78-37/01).

CAUTION : MAKE SURE THAT THERE IS NO HYDRAULIC PRESSURE WHILE YOU DO THIS TEST. PUT A WARNING NOTICE IN THE COCKPIT TO TELL PERSONS NOT TO PRESSURIZE THE HYDRAULIC SYSTEMS.

(1) If the test does not give the maintenance message **HCU, TRSOV, HYD** but the fault message is shown again on the subsequent flights:
- replace the **STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG2 (3EG2).**

(a) If the fault continues:
- replace the **RELAY-THRUST REVERSER LOCKING POWER, ENG2 (2EG2).**

(2) If the test gives the maintenance message **HCU, TRSOV, HYD** or the thrust reverser blocker doors do not deploy normally or stow during the test:
- replace the **STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG2 (3EG2).**

(a) If the fault continues:
- replace the **RELAY-THRUST REVERSER LOCKING POWER, ENG2 (2EG2).**

(b) If the fault continues:
- make sure that you have correctly exited the **FADEC** menu mode,
- disconnect the electrical connector from the thrust reverser isolation valve **(5OEG2),**
- on the overhead panel **5OVU,** push and release the **P/BSW-ENG/FADEC GND PWR/2 (7KS2)** the **ON** legend comes on,
- set the engine 2 throttle control lever to the reverse position. Make sure that the throttle control lever of the opposite engine is in the idle position,
- do a check for ground at pin **A/2** of the thrust reverser isolation valve **(5OEG2).**

1 If there is no ground:
- repair the wiring or the ground terminal **48OVN2** (Ref. **AWM 78-36-03).**

2 If there is ground:
- do a check for **115VAC** between pins 1 and 2 of the connector on the harness side.

a If there is **115VAC:**
- replace the **VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG2 (5OEG2)** (Ref. **AMM TASK 78-37-51-000-001)** and (Ref. **AMM TASK 78-37-51-400-001).**
  If the fault continues:
- replace the **HCU-THRUST REV (41O1KS)** (Ref. **AMM TASK 78-31-51-000-042)** and (Ref. **AMM TASK 78-31-51-400-042).**

b If there is no **115VAC:**
- on the overhead panel **5OVU,** push the **P/BSW-ENG/FADEC GND PWR/2 (7KS2)** the **ON** legend goes off,
- do a continuity check of the electrical wiring between the thrust reverser isolation valve **(5OEG2)** pin **A/1** and the power relay **2EG2** pin **A/A2.**

c If the wiring is not correct:
- repair as required.

d If the wiring is correct:
- remove the static relay (3EG2) and the power relay (2EG2) from their base on 120VU.
- on the overhead panel 50VU, push and release the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend comes on,
- with the engine 2 throttle control lever still in reverser position, do a check for 115VAC at pin A/B1 of the relay base 2EG2.

e If there is no 115VAC:
- repair the wiring or replace the C/B-SAFETY CIRCUIT BREAKER OPEN (1EG2).

f If there is 115VAC:
- do a check for 28VDC at pin A/X of the relay base 3EG2.

g If there is no 28VDC:
- repair the wiring or replace the C/B-ENGINE/ENG2/OIL/PRESS (2EN2).

h If there is 28VDC:
- do a check for ground at pin A/X2 at the relay base 2EG2 and pin A/Z of the relay base 3EG2.

i If there is no ground:
- repair the wiring.

j If there is ground:
- on the overhead panel 50VU, push the P/BSW-ENG/FADEC GND PWR/2 (7KS2) the ON legend goes off,
- set the engine 2 throttle control lever to idle position,
- do a check of the wiring continuity between the static relay (3EG2), the SEC1 (1CE1) and the SEC3 (1CE3).

k If the wiring is correct:
- make sure that there is no ground at pin AE/15F on the SEC1 (1CE1) and the SEC3 (1CE3) (Ref. ASM 78-37/01).
- look for any FCDC or radio altimeter failure (Chek Post Flight Report (PFR)) causing SEC output malfunction (TSM chapter 27).

l If no external failure to the SECs is found:
- replace successively the SEC-1 (1CE1) then the SEC-3 (1CE3) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

(3) If thrust reverser operation (deploy and stow) was normal during aircraft operation and during the test but the test gives the maintenance message HCU, TRSOV, HYD or HCU (TRPV), HYD:
- replace the HCU pressure switch (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(a) If the fault continues:
- replace the HCU (4101KS2) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

B. Do the test given in Para. 3.B.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-857

Failure of the HCU Pressurizing Valve on the Engine 1

1. Possible Causes

- PRESS SW-HCU (4102KS)
- HCU-THRUST REV (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (MENU mode test) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected open when reverse stowage is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch. The warning ENG 1 REV PRESSURIZED is generated only if the fault has persisted for more than 10 seconds:
- switch closed = no pressure,
- switch opened = valve pressurized.

(1) If the test gives the maintenance message HCU (TRPV), OPEN and the thrust reverser blocker doors deploy and stow normally:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test gives the maintenance message HCU (TRPV), OPEN and the thrust reverser blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test does not give the maintenance message HCU (TPRV), OPEN:
- replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-858

Failure of the HCU Pressurizing Valve on the Engine 2

1. Possible Causes

- PRESS SW-HCU (4102KS)
- HCU-THRUST REV (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit

3. Fault Confirmation

A. Test

(1) Do the operational test of the thrust reverser system (MENU mode test) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. The fault message is generated if a position fault is detected on the HCU pressurizing valve (valve detected open when reverse stowage is commanded). The HCU pressurizing valve position monitoring is based upon the output signal of the HCU pressure switch. The warning ENG 2 REV PRESSURIZED is generated only if the fault has persisted for more than 10 seconds:
- switch closed = no pressure,
- switch opened = valve pressurized.

(1) If the test gives the maintenance message HCU (TRPV), OPEN and the thrust reverser blocker doors deploy and stow normally:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test gives the maintenance message HCU (TRPV), OPEN and the thrust reverser blocker doors do not deploy or stow normally:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(3) If the test does not give the maintenance message HCU (TPRV), OPEN:
- replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(a) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-859

Failure of the Thrust Reverser Pressure Switch in the Open Position on the Engine 1

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-004	Removal of the ECU (Channel B) to Thrust Reverser Junction Box Harnesses (4214KS)
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-004	Installation of the ECU (Channel B) to thrust Reverser Junction Box Harnesses (4214KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)(4000KS)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)(4000KS)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message TR PR SW, J5+J6, ECU:
- do a check for open or short to ground of the harnesses J5 and J6 between the ECU (4000KS) and the HCU pressure switch, pins J5 and J6/12, 13 to pins N/2, 3 and N/4, 5 (Ref. ASM 73-25/16).

(1) If one of these wirings is not correct:
- repair the above wiring.

(2) If the wirings are correct:
- disconnect the harnesses J5 and J6 from the HCU pressure switch
- install jumper wires between pins 2 and 3 for the harness J5 and between pins 4 and 5 for the harness J6
- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check of the harnesses J5 and J6 between:
  . pins 12 and 13 (< 5 Ohms)
  . pins 12 and 11 (> 10 Megohms)
  . pin 12 and the ground (> 10 Megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(b) If the resistance values are out of the specified limits:
- replace the defective harness J5 (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) or harness J6 (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004).

(3) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3. A.

TASK 78-31-00-810-860

Failure of the Thrust Reverser Pressure Switch in the Open Position on the Engine 2

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-004	Removal of the ECU (Channel B) to Thrust Reverser Junction Box Harnesses (4214KS)
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-004	Installation of the ECU (Channel B) to thrust Reverser Junction Box Harnesses (4214KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)(4000KS)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)(4000KS)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-041	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-041	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message TR PR SW, J5+J6, ECU:
- do a check for open or short to ground of the harnesses J5 and J6 between the ECU (4000KS) and the HCU pressure switch, pins J5 and J6/12, 13 to pins N/2, 3 and N/4, 5 (Ref. ASM 73-25/16).

(1) If one of these wirings is not correct:
- repair the above wirings.

(2) If the wirings are correct:
- disconnect the harnesses J5 and J6 from the HCU pressure switch
- install jumper wires between pins 2 and 3 for the harness J5 and between pins 4 and 5 for the harness J6
- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check of the harnesses J5 and J6 between:
  . pins 12 and 13 (< 5 ohms)
  . pins 12 and 11 (> 10 megohms)
  . pin 12 and the ground (> 10 megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-041) and (Ref. AMM TASK 78-31-16-400-041).

(b) If the resistance values are out of the specified limits:
- replace the defective harness J5 (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049) or harness J6 (Ref. AMM TASK 71-51-43-000-004) and (Ref. AMM TASK 71-51-43-400-004).

(3) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-861

Failure of the T/R Hydraulic Isolation Valve in the Open Position on the Engine 1

1. Possible Causes

- VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG1 (5OEG1)
- STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG1 (3EG1)
- RELAY-THRUST REVERSER LOCKING POWER, ENG1 (2EG1)
- SEC-1 (1CE1)
- SEC-2 (1CE2)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-37-51-000-001	Removal of the Thrust Reverser Hydraulic Isolation Valve
AMM 78-37-51-400-001	Installation of the Thrust Reverser Hydraulic Isolation Valve
ASM 78-37/01	

3. Fault Confirmation

A. Test

(1) Open, safety and tag the circuit breaker 1EG1 and do the operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. Table of the circuit breakers used in this procedure:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG1/REV/LOCK	1EG1	N44

B. The fault message is generated if the ECU detects a pressurization of the thrust reverser HCU during the thrust reverser isolation valve monitoring test after the engine start. The message indicates that the thrust reverser isolation valve has failed in the open position or is leaking internally.

(1) If the thrust reverser blocker doors deployed during the test:
- replace the VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG1 (5OEG1) (Ref. AMM TASK 78-37-51-000-001) and (Ref. AMM TASK 78-37-51-400-001).

(2) If the thrust reverser blocker doors did not deploy during the test:
- look for the cause of abnormal permanent electrical supply of the thrust reverser isolation valve or undue fault annunciation as follows (Ref. ASM 78-37/01),
- replace the STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG1 (3EG1).

(a) If the fault continues:
- replace the RELAY-THRUST REVERSER LOCKING POWER, ENG1 (2EG1).

(b) If the fault continues:
- remove the static relay (3EG1) from its base on shelf 12OVU and do a check for permanent ground at pin A/1.

1 If there is ground:
- do a check for short to ground between the SEC1 (1CE1), the SEC2 (1CE2) and the static relay (3EG1).

a If the wiring is not correct:
- repair as required.

b If the wiring is correct:
- do the trouble shooting of the SEC1 (1CE1) and the SEC2 (1CE2) for abnormal ground at pin AB/15E on the SEC1 (1CE1) and at pin AB/15E on the SEC2 (1CE2) (Ref. ASM 78-37/01),
- look for any FCDC or radio altimeter failure (in Post Flight Report (PFR)) causing SEC output malfunction (TSM chapter 27).

. If no external failure to the SECs is found:
- replace successively the SEC-1 (1CE1) then the SEC-2 (1CE2) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

C. Make sure that this(these) circuit breaker(s) is(are) closed:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG1/REV/LOCK	1EG1	N44

D. Check that the warning and failure message do not duplicate at next engine start.

TASK 78-31-00-810-862

Failure of the T/R Hydraulic Isolation Valve in the Open Position on the Engine 2

1. Possible Causes

- VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG2 (5OEG2)
- STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG2 (3EG2)
- RELAY-THRUST REVERSER LOCKING POWER, ENG2 (2EG2)
- SEC-1 (1CE1)
- SEC-3 (1CE3)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 27-94-34-000-001	Removal of the SEC (1CE1,1CE2,1CE3)
AMM 27-94-34-400-001	Installation of the SEC (1CE1,1CE2,1CE3)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-37-51-000-001	Removal of the Thrust Reverser Hydraulic Isolation Valve
AMM 78-37-51-400-001	Installation of the Thrust Reverser Hydraulic Isolation Valve
ASM 78-37/01	

3. Fault Confirmation

A. Test

(1) Open, safety and tag the circuit breaker 1EG2 and do the operational test of the thrust reverser system (2A and 2B) (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. Table of the circuit breakers used in this procedure:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG2/REV/LOCK	1EG2	N45

B. The fault message is generated if the ECU detects a pressurization of the thrust reverser HCU during the thrust reverser isolation valve monitoring test after the engine start. The message indicates that the thrust reverser isolation valve has failed in the open position or is leaking internally.

(1) If the thrust reverser blocker doors deployed during the test:
- replace the VALVE-THRUST REVERSER HYDRAULIC ISOLATION, ENG2 (5OEG2) (Ref. AMM TASK 78-37-51-000-001) and (Ref. AMM TASK 78-37-51-400-001).

(2) If the thrust reverser blocker doors did not deploy during the test:
- look for the cause of abnormal permanent electrical supply of the thrust reverser isolation valve or undue fault annunciation as follows (Ref. ASM 78-37/01),
- replace the STATIC RELAY-THRUST REVERSER LOCKING CTL, ENG2 (3EG2).

(a) If the fault continues:
- replace the RELAY-THRUST REVERSER LOCKING POWER, ENG2 (2EG2).

(b) If the fault continues:
- remove the static relay (3EG2) from its base on shelf 120VU and do a check for permanent ground at pin A/1.

1 If there is ground:
- do a check for short to ground between the SEC1 (1CE1), the SEC3 (1CE3) and the static relay (3EG2).

a If the wiring is not correct:
- repair as required.

b If the wiring is correct:
- do the trouble shooting of the SEC1 (1CE1) and the SEC3 (1CE3) for abnormal ground at pin AE/15F on the SEC1 (1CE1) and at pin AE/15F on the SEC3 (1CE3) (Ref. ASM 78-37/01),
- look for any FCDC or radio altimeter failure (in Post Flight Report (PFR)) causing SEC output malfunction (TSM chapter 27).

. If no external failure to the SECs is found:
- replace successively the SEC-1 (1CE1) then the SEC-3 (1CE3) (Ref. AMM TASK 27-94-34-000-001) and (Ref. AMM TASK 27-94-34-400-001).

C. Make sure that this(these) circuit breaker(s) is(are) closed:

PANEL	DESIGNATION	IDENT.	LOCATION
121VU	ENG2/REV/LOCK	1EG2	N45

D. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

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TASK 78-31-00-810-863

Failure of the Thrust Reverser Blocker Door(s) or T/R Indication Failure on the Engine 1

1. Possible Causes

- LATCH-BLOCKER DOOR, UPPER R (3002KM1)
- LATCH-BLOCKER DOOR, LOWER R (3002KM2)
- LATCH-BLOCKER DOOR, LOWER L (3002KM3)
- LATCH-BLOCKER DOOR, UPPER L (3002KM4)
- SW-BLOCKER DOOR STOW, LOWER R (4104KS2)
- SW-BLOCKER DOOR STOW, UPPER R (4104KS1)
- SW-BLOCKER DOOR STOW, LOWER L (4104KS3)
- SW-BLOCKER DOOR STOW, UPPER L (4104KS4)
- HCU filter
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)
- HCU-THRUST REV (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-18-000-001	Removal of the Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-18-400-001	Installation of the Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-19-000-001	Removal of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-19-400-001	Installation of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)

REFERENCE	DESIGNATION
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-210-041	Check of the Indicator of Thrust-Reverser Hydraulic-Control-Unit Filter
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM 78-32-41-210-002	Detailed Visual Inspection of the Blocker Door
AMM 78-32-41-820-001	Alignment of the Blocker Door
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do a visual check of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-210-002):
- make sure that they are locked (flush with the forward frame of the thrust reverser).

(2) With the fans cowls open, grab each blocker door at the leading edge and make sure that the door cannot move from the stow position.

NOTE : The fault is generated if at least one blocker door is detected unstowed by the FADEC. If the ECAM warning ENG 1 REVERSER FAULT was also associated to the warning ENG 1 REVERSER UNLOCKED, this indicates that the FADEC auto-restow function was activated. If this was the case, pay particular attention to the rigging of the blocker doors (Ref. AMM TASK 78-32-41-820-001).

NOTE : The ECU (4000KS) is the less probable cause of this fault.

4. Fault Isolation

A. If one of the blocker doors is found unlocked or opens during the manual check:
- replace the defective LATCH-BLOCKER DOOR, UPPER R (3002KM1) or LATCH-BLOCKER DOOR, LOWER R (3002KM2) or LATCH-BLOCKER DOOR, LOWER L (3002KM3) or LATCH-BLOCKER DOOR, UPPER L (3002KM4), (Ref. AMM TASK 78-31-19-000-001) and (Ref. AMM TASK 78-31-19-400-001).

(1) If the fault continues:
- do a check of the HCU filter pop-out indicator (Ref. AMM TASK 78-31-51-210-041).

(a) If extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the fault continues:
- replace the associated blocker door actuator: **ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)** or **ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)** or **ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)** or **ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)** (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

B. If more than one blocker door is found unlocked or opens during the manual check:
- replace the **HCU-THRUST REV (4101KS)** (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

C. If all of the blocker doors are found steadily locked (flush with forward frame of the thrust reverser):
- make sure that the fault has not been triggered due to improper stowage of the blocker doors due to previous maintenance action on the thrust reverser. If the blocker doors were not properly stowed, the warning may have resulted from the activation of the FADEC auto-restow function.

(1) If you confirm that this was the case:
- do an operational test of the thrust reverser (Ref. AMM TASK 78-31-00-710-042).

(a) If there is no fault and the blocker doors are properly locked after the test:
- no further maintenance action is required.

(b) If the fault continues:
- continue the trouble shooting procedure as described in Para. 4.C.(2)(a).

(2) If you cannot confirm that previous maintenance action was the cause:

(a) Disconnect the thrust reverser harness at the lower R/H stow switch (4104KS2) and do an electrical resistance check between:
. pins 2 and 5 (<5 ohms)
. pins 4 and 9 (<5 ohms)
. pins 2 and 3 (>10 megohms)
. pins 4 and 7 (>10 megohms)
. pin 2 and the ground (>10 megohms)
. pin 9 and the ground (>10 megohms)
. pin 3 and the ground (>10 megohms)
. pin 7 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- replace the **SW-BLOCKER DOOR STOW, LOWER R (4104KS2)**, (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

2 If the resistance values are in the specified limits:
- manually deploy the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001) and do an electrical resistance check between:
. pins 2 and 3 (<5 ohms)
. pins 4 and 7 (<5 ohms)
. pins 2 and 5 (>10 megohms)
. pins 4 and 9 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the SW-BLOCKER DOOR STOW, LOWER R (4104KS2), (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

(b) Repeat the above electrical checks for other switches (SW-BLOCKER DOOR STOW, UPPER R (4104KS1), SW-BLOCKER DOOR STOW, LOWER L (4104KS3), SW-BLOCKER DOOR STOW, UPPER L (4104KS4)) and replace as necessary (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

(c) If the resistance values are in the specified limits:
- reconnect the thrust reverser harness at each stow switch, manually stow all the blocker doors and disconnect harnesses J5 and J6 from the ECU,
- on the connectors of the harnesses J5 and J6 do a resistance check between:
. pins 23 and 24 (<5 ohms).

1 If there is an open circuit:
- replace or repair the harnesses J5 and J6 or the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If the resistance values are in the specified limits:
- do a check of the rigging of the blocker doors and correct as required (Ref. AMM TASK 78-32-41-820-001).

a If the fault continues:
- replace the ECU (4000KS), (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

D. Do an operational test of the thrust reverser (Ref. AMM TASK 78-31-00-710-042).

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-864

Failure of the Thrust Reverser Blocker Door(s) or T/R Indication Failure on the Engine 2

1. Possible Causes

- LATCH-BLOCKER DOOR, UPPER R (3002KM1)
- LATCH-BLOCKER DOOR, LOWER R (3002KM2)
- LATCH-BLOCKER DOOR, LOWER L (3002KM3)
- LATCH-BLOCKER DOOR, UPPER L (3002KM4)
- SW-BLOCKER DOOR STOW, LOWER R (4104KS2)
- SW-BLOCKER DOOR STOW, UPPER R (4104KS1)
- SW-BLOCKER DOOR STOW, LOWER L (4104KS3)
- SW-BLOCKER DOOR STOW, UPPER L (4104KS4)
- HCU filter
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)
- HCU-THRUST REV (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-18-000-001	Removal of the Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-18-400-001	Installation of the Blocker Door Stow-switch (4104KS1,4104KS2,4104KS3,4104KS4)
AMM 78-31-19-000-001	Removal of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-19-400-001	Installation of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit

REFERENCE	DESIGNATION
AMM 78-31-51-210-041	Check of the Indicator of Thrust-Reverser Hydraulic-Control-Unit Filter
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
AMM 78-32-41-210-002	Detailed Visual Inspection of the Blocker Door
AMM 78-32-41-820-001	Alignment of the Blocker Door
AMM 78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do a visual check of the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-210-002):
- make sure that they are locked (flush with the forward frame of the thrust reverser).

(2) With the fans cowls open, grab each blocker door at the leading edge and make sure that the door cannot move from the stow position.

NOTE : The fault is generated if at least one blocker door is detected unstowed by the FADEC. If the ECAM warning ENG 2 REVERSER FAULT was also associated to the warning ENG 2 REVERSER UNLOCKED, this indicates that the FADEC auto-restow function was activated. If this was the case, pay particular attention to the rigging of the blocker doors (Ref. AMM TASK 78-32-41-820-001).

NOTE : The ECU (4000KS) is the less probable cause of this fault.

4. Fault Isolation

A. If one of the blocker doors is found unlocked or opens during the manual check:
- replace the defective LATCH-BLOCKER DOOR, UPPER R (3002KM1) or LATCH-BLOCKER DOOR, LOWER R (3002KM2) or LATCH-BLOCKER DOOR, LOWER L (3002KM3) or LATCH-BLOCKER DOOR, UPPER L (3002KM4), (Ref. AMM TASK 78-31-19-000-001) and (Ref. AMM TASK 78-31-19-400-001).

(1) If the fault continues:
- do a check of the HCU filter pop-out indicator (Ref. AMM TASK 78-31-51-210-041).

(a) If extended:
- replace the HCU filter (Ref. AMM TASK 78-31-51-920-001).

(b) If the fault continues:
- replace the associated blocker door actuator: **ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)** or **ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)** or **ACTUATOR-BLOCKER DOOR, UPPER L (3001KM3)** or **ACTUATOR-BLOCKER DOOR, LOWER L (3001KM4)** (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

B. If more than one blocker door is found unlocked or opens during the manual check:
- replace the **HCU-THRUST REV (4101KS)** (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

C. If all of the blocker doors are found steadily locked (flush with forward frame of the thrust reverser):
- make sure that the fault has not been triggered due to improper stowage of the blocker doors due to previous maintenance action on the thrust reverser. If the blocker doors were not properly stowed, the warning may have resulted from the activation of the **FADEC** auto-restow function.

(1) If you confirm that this was the case:
- do an operational test of the thrust reverser (Ref. AMM TASK 78-31-00-710-042).

(a) If there is no fault and the blocker doors are properly locked after the test:
- no further maintenance action is required.

(b) If the fault continues:
- continue the trouble shooting procedure as described in Para. 4.C.(2)(a).

(2) If you cannot confirm that previous maintenance action was the cause:

(a) Disconnect the thrust reverser harness at the lower R/H stow switch (4104KS2) and do an electrical resistance check between:
. pins 2 and 5 (<5 ohms)
. pins 4 and 9 (<5 ohms)
. pins 2 and 3 (>10 megohms)
. pins 4 and 7 (>10 megohms)
. pin 2 and the ground (>10 megohms)
. pin 9 and the ground (>10 megohms)
. pin 3 and the ground (>10 megohms)
. pin 7 and the ground (>10 megohms).

1 If the resistance values are out of the specified limits:
- replace the **SW-BLOCKER DOOR STOW, LOWER R (4104KS2)**, (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

2 If the resistance values are in the specified limits:
- manually deploy the thrust reverser blocker doors (Ref. AMM TASK 78-32-41-860-001) and do an electrical resistance check between:
. pins 2 and 3 (<5 ohms)
. pins 4 and 7 (<5 ohms)
. pins 2 and 5 (>10 megohms)
. pins 4 and 9 (>10 megohms).

a If the resistance values are out of the specified limits:
- replace the SW-BLOCKER DOOR STOW, LOWER R (4104KS2), (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

(b) Repeat the above electrical checks for other switches (SW-BLOCKER DOOR STOW, UPPER R (4104KS1), SW-BLOCKER DOOR STOW, LOWER L (4104KS3), SW-BLOCKER DOOR STOW, UPPER L (4104KS4)) and replace as necessary (Ref. AMM TASK 78-31-18-000-001) and (Ref. AMM TASK 78-31-18-400-001).

(c) If the resistance values are in the specified limits:
- reconnect the thrust reverser harness at each stow switch, manually stow all the blocker doors and disconnect harnesses J5 and J6 from the ECU,
- on the connectors of the harnesses J5 and J6 do a resistance check between:
. pins 23 and 24 (<5 ohms).

1 If there is an open circuit:
- replace or repair the harnesses J5 and J6 or the thrust reverser harness (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049).

2 If the resistance values are in the specified limits:
- do a check of the rigging of the blocker doors and correct as required (Ref. AMM TASK 78-32-41-820-001).

a If the fault continues:
- replace the ECU (4000KS), (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

D. Do an operational test of the thrust reverser (Ref. AMM TASK 78-31-00-710-042).

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

**ON A/C 254-275, 451-475,

TASK 78-31-00-810-867

Indication of Reverser Fault Warning at Engine Shutdown/Master Lever Selection to OFF on Engine 1

1. Possible Causes

- nuisance warning

2. Job Set-up Information

Not Applicable

3. Fault Confirmation

A. Test

(1) Not applicable.

4. Fault Isolation

A. If the ECAM warning ENG 1 REVERSER FAULT was reported at engine shutdown after master lever was selected to OFF with ECU PN 1820M36P07 or 1820M89P07 and no associated failure message:
- no maintenance action is required. The nuisance warning is spurious.

NOTE : The ECU PN can be checked on MCDU screen (Access Engine 1 SYSTEM REPORT TEST, FADEC LRU identification screen).

B. No additional maintenance action is required if the fault is not confirmed.

(1) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-868

Indication of Reverser Fault Warning at Engine Shutdown/Master Lever Selection to OFF on Engine 2

1. Possible Causes

- nuisance warning

2. Job Set-up Information

Not Applicable

3. Fault Confirmation

A. Test

(1) Not applicable.

4. Fault Isolation

A. If the ECAM warning ENG 2 REVERSER FAULT was reported at engine shutdown after master lever was selected to OFF with ECU PN 1820M36P07 or 1820M89P07 and no associated failure message:
- no maintenance action is required. The nuisance warning is spurious.

NOTE : The ECU PN can be checked on MCDU screen (Access Engine 2 SYSTEM REPORT TEST, FADEC LRU identification screen).

B. No additional maintenance action is required if the fault is not confirmed.

(1) Repeat the fault isolation procedure if the fault continues.

**ON A/C ALL

TASK 78-31-00-810-869

Slow Operation or non Deployment of the Thrust Reverser

1. Possible Causes

- HCU-THRUST REV (4101KS)
- CTL UNIT-THROTTLE, ENG 1 (8KS1)
- CTL UNIT-THROTTLE, ENG 2 (8KS2)
- RELAY-THRUST REV INHIBITION, ENG 1 (14KS1)
- RELAY-THRUST REV INHIBITION, ENG 2 (14KS2)
- CHECK VALVE-ENG 1 THR REV, G (3010KM1)
- CHECK VALVE-ENG 2 THR REV, Y (3010KM2)
- LATCH-BLOCKER DOOR, LOWER R (3002KM2)
- LATCH-BLOCKER DOOR, UPPER R (3002KM1)
- LATCH-BLOCKER DOOR, UPPER L (3002KM4)
- LATCH-BLOCKER DOOR, LOWER L (3002KM3)
- ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1)
- ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)
- ACTUATOR-BLOCKER DOOR, LOWER L (3001KM3)
- ACTUATOR-BLOCKER DOOR, UPPER L (3001KM4)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 29-11-35-000-001	Removal of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 29-11-35-400-001	Installation of the Engine 1 Thrust Reverser Check Valve (3010KM1)
AMM 29-13-35-000-001	Removal of the Engine 2 Thrust Reverser Check Valve (3010KM2)
AMM 29-13-35-400-001	Installation of the Engine 2 Thrust Reverser Check Valve (3010KM2)
AMM 76-11-19-000-042	Removal of the Throttle Control Unit (8KS1, 8KS2)
AMM 76-11-19-400-042	Installation of the Throttle Control Unit (8KS1, 8KS2)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-19-000-001	Removal of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-19-400-001	Installation of the Blocker Door Latches (3002KM1,3002KM2,3002KM3,3002KM4)
AMM 78-31-41-000-001	Removal of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)

REFERENCE	DESIGNATION
AMM 78-31-41-400-001	Installation of the Blocker Door Hydraulic Actuator (3001KM1,3001KM2,3001KM3, 3001KM4)
AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM 78-31-51-210-041	Check of the Indicator of Thrust-Reverser Hydraulic-Control-Unit Filter
AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM 78-31-51-920-001	Replacement of the Hydraulic Control Unit Filter
ASM 73-25/16	

3. Fault Confirmation

A. Make sure that the thrust reverser is not inhibited.

(1) Do an operational test of the thrust reverser system (1A and 1B) (Ref. AMM TASK 78-31-00-710-042).

NOTE : If the thrust reverser does not deploy or is slow to deploy, do a check of the thrust reverser test result and the Post Flight Report (PFR). If any thrust reverser related fault message is present, do the relevant trouble shooting procedure.

4. Fault Isolation

A. If no message is present:
- replace the HCU-THRUST REV (4101KS) (Ref. AMM TASK 78-31-51-000-042) and (Ref. AMM TASK 78-31-51-400-042).

(1) If the fault continues:
- replace the CTL UNIT-THROTTLE, ENG 1 (8KS1) (CTL UNIT-THROTTLE, ENG 2 (8KS2)) (Ref. AMM TASK 76-11-19-000-042) and (Ref. AMM TASK 76-11-19-400-042).

(2) If the fault continues:
- replace the RELAY-THRUST REV INHIBITION, ENG 1 (14KS1) (RELAY-THRUST REV INHIBITION, ENG 2 (14KS2)) (Ref. ASM 73-25/16).

(3) If the fault continues:
- remove the CHECK VALVE-ENG 1 THR REV, G (3010KM1) (Ref. AMM TASK 29-11-35-000-001) (CHECK VALVE-ENG 2 THR REV, Y (3010KM2) (Ref. AMM TASK 29-13-35-000-001)),
- do a check of the valve for signs of damage or contamination,
- clean or replace as required (Ref. AMM TASK 29-11-35-400-001) ((Ref. AMM TASK 29-13-35-400-001)).

(a) If contamination is found:
- do a check of the HCU filter for contamination (Ref. AMM TASK 78-31-51-210-041).

1 If contamination is found:
- replace the HCU filter and flush the hydraulic circuit (Ref. AMM TASK 78-31-51-920-001).

(b) If nothing is found and none of the doors deploy:

NOTE : The thrust reverser latches and actuators opening sequence is set as follows:
first LATCH-BLOCKER DOOR, LOWER R (3002KM2),
second LATCH-BLOCKER DOOR, UPPER R (3002KM1),
third LATCH-BLOCKER DOOR, UPPER L (3002KM4),
fourth LATCH-BLOCKER DOOR, LOWER L (3002KM3),
the door will deploy only if all latches are opened.

- replace successively the four blocker doors latches (Ref. AMM TASK 78-31-19-000-001) and (Ref. AMM TASK 78-31-19-400-001) according to the opening sequence of the latches.

1 If nothing is found but at least one blocker door deploys:
- replace successively the ACTUATOR-BLOCKER DOOR, UPPER R (3001KM1) (ACTUATOR-BLOCKER DOOR, LOWER R (3001KM2)) (ACTUATOR-BLOCKER DOOR, LOWER L (3001KM3)) (ACTUATOR-BLOCKER DOOR, UPPER L (3001KM4)) of the doors that do not deploy (Ref. AMM TASK 78-31-41-000-001) and (Ref. AMM TASK 78-31-41-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-870

Failure of the Thrust Reverser Deploy Indication

1. Possible Causes

- SW-BLOCKER DOOR DEPLOY, L (4103KS1)
- SW-BLOCKER DOOR DEPLOY, R (4103KS2)
- harnesses J5 and J6
- thrust reverser harness

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
78-31-00-810-869	Slow Operation or non Deployment of the Thrust Reverser
AMM 71-51-43-000-049	Removal of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 71-51-43-400-049	Installation of the ECU (Channel A) to Thrust Reverser Junction Box Harnesses (4213KS)
AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM 78-31-17-000-001	Removal of the Blocker Door Deploy Switch (4103KS1,4103KS2)
AMM 78-31-17-000-002	Removal of the Beam Electrical Harness
AMM 78-31-17-210-001	Detailed Visual Inspection of the Deploy Switches and Triggers
AMM 78-31-17-400-001	Installation of the Blocker Door Deploy Switch (4103KS1,4103KS2)
AMM 78-31-17-400-002	Installation of the Beam Electrical Harness

3. Fault Confirmation

A. Test

(1) Not applicable.

(2) If the amber REV indication was associated to normal deployment of the blocker doors:
- do the following procedure.

(3) If the blocker doors did not deploy:
- do the relevant procedure per (Ref. TASK 78-31-00-810-869).

4. Fault Isolation

A. This fault is generated when the deploy switches indication is intermittent or has failed when reverse is selected. This may cause the engine power to fluctuate between idle and full reverse thrust power.

(1) Do an inspection of the control levers of the thrust-reverser deploy switches and make sure that they operate smoothly (Ref. AMM TASK 78-31-17-210-001).

NOTE : Most probable cause is seizure of the deploy switches control levers or intermittent electrical contact in the switches or in the associated harnesses or play between switch outer lever and bushing or outer lever pad damaged or missing.

(a) If damage is found:
- repair or replace as required.

(b) If nothing is found:
- examine the Post Flight Report and Last Leg Report for fault messages DEPL SW, J5/J6, ECU or DEPLSTW, J5/J6, ECU.

1 If one of these fault messages is present:
- do the relevant trouble shooting procedure (Ref TSM CFDS ATA 78).

2 If no fault message is present:
- do a check of the harnesses J5 and J6 and the thrust reverser harness from the ECU to the deploy switches for any damage, loose or contaminated connectors including the thrust reverser junction box.

a If damage is found:
- clean, retighten connectors or replace harnesses and beam harnesses as required (Ref. AMM TASK 71-51-43-000-049) and (Ref. AMM TASK 71-51-43-400-049)

(c) If nothing is found:
- replace the SW-BLOCKER DOOR DEPLOY, L (4103KS1) SW-BLOCKER DOOR DEPLOY, R (4103KS2) (Ref. AMM TASK 78-31-17-000-001) and (Ref. AMM TASK 78-31-17-400-001).

(d) If nothing is found:
- replace beam harnesses (Ref. AMM TASK 78-31-17-000-002) and (Ref. AMM TASK 78-31-17-400-002).

B. Do an operational test of the thrust reverser (Ref. AMM TASK 78-31-00-710-042) and make sure that the ECAM REV indication is correct. (Amber in transit then green when reverser blocker doors are fully deployed).

TASK 78-31-00-810-871

Partial deployment of the Thrust Reverser when commanded to deploy on ENG1

1. Possible Causes

- TR hydraulic tubes
- blocker door actuator
- stow-switches
- electrical harness
- EIU
- HCU (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE		DESIGNATION
AMM	73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM	73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM	73-25-34-000-040	Removal of the Engine Interface Unit (EIU)
AMM	73-25-34-400-040	Installation of the Engine Interface Unit (EIU)
AMM	78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM	78-31-18-210-001	Detailed Visual Inspection of the Stow-switches (4104ks1,4104ks2,4104ks3,4104ks4)
AMM	78-31-41-210-042	General Visual Inspection of Actuator Rod End Attachments (Blocker Doors Deployed)
AMM	78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
R AMM	78-31-49-210-002	General Visual Inspection of Hydraulic Tubing and Hoses (Blocker Doors Deployed)
AMM	78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM	78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM	78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do an operational test of the Trust reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message TR LOCK, TR ACT:

NOTE : If the Thrust Reverser is partially open when commanded to deploy, the ECU triggers the "TR LOCK, TR ACT" maintenance message instead of "EIU, HCU" (due to 2 fault parameters inverted into the ECU software), carry out the following TSM procedure without take into account the components highlighted into the maintenance message.

- Do a general visual inspection of the TR hydraulic tubes (Ref. AMM TASK 78-31-49-210-002)

(1) If damage is found:
- repair or replace as necessary.

(2) If mothing is found:
- Perform a manual deployment of the blocker door (Ref. AMM TASK 78-32-41-860-001)
- Do a general visual inspection of blocker door actuator rod end attachments (Ref. AMM TASK 78-31-41-210-042)

(a) If damage is found:
- repair or replace as necessary.

(b) If nothing is found:
- Do a detailed visual inspection of the stow-switches (Ref. AMM TASK 78-31-18-210-001).

1 If damaged is found:
- repair or replace as necessary.

2 if nothing is found:
- Do a detailed visual inspection of the electrical harness (Ref. AMM TASK 78-31-42-210-041)

a If damage is found:
- repair or replace as necessary.

b if nothing is found:
- Replace the EIU (Ref. AMM TASK 73-25-34-000-040) (Ref. AMM TASK 73-25-34-400-040).
* If the fault continues, replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) (Ref. AMM TASK 78-31-51-400-042).
** If the fault continues, replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) (Ref. AMM TASK 73-21-60-400-001)

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-872

Partial deployment of the Thrust Reverser when commanded to deploy on ENG2

1. Possible Causes

- TR hydraulic tubes
- blocker door actuator
- stow-switches
- electrical harness
- EIU
- HCU (4101KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE		DESIGNATION
AMM	73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
AMM	73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
AMM	73-25-34-000-040	Removal of the Engine Interface Unit (EIU)
AMM	73-25-34-400-040	Installation of the Engine Interface Unit (EIU)
AMM	78-31-00-710-042	Operational Test of the Thrust Reverser System
AMM	78-31-18-210-001	Detailed Visual Inspection of the Stow-switches (4104ks1,4104ks2,4104ks3,4104ks4)
AMM	78-31-41-210-042	General Visual Inspection of Actuator Rod End Attachments (Blocker Doors Deployed)
AMM	78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
R AMM	78-31-49-210-002	General Visual Inspection of Hydraulic Tubing and Hoses (Blocker Doors Deployed)
AMM	78-31-51-000-042	Removal of the Hydraulic Control Unit
AMM	78-31-51-400-042	Installation of the Hydraulic Control Unit
AMM	78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do an operational test of the Thrust Reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message TR LOCK, TR ACT:

NOTE : If the Thrust Reverser is partially open when commanded to deploy, the ECU triggers the "TR LOCK, TR ACT" maintenance message instead of "EIU, HCU" (due to 2 fault parameters into the ECU software), carry out the following TSM procedure without take into account the components highlighted into the maintenance message.

- Do a general visual inspection of the TR hydraulic tubes (Ref. AMM TASK 78-31-49-210-002)

(1) If damage is found:
- repair or replace as necessary.

(2) If mothing is found:
- Perform a manual deployment of the blocker door (Ref. AMM TASK 78-32-41-860-001)
- Do a general visual inspection of blocker door actuator rod end attachments (Ref. AMM TASK 78-31-41-210-042)

(a) If damage is found:
- repair or replace as necessary.

(b) If nothing is found:
- Do a detailed visual inspection of the stow-switches (Ref. AMM TASK 78-31-18-210-001).

1 If damaged is found:
- repair or replace as necessary.

2 if nothing is found:
- Do a detailed visual inspection of the electrical harness (Ref. AMM TASK 78-31-42-210-041)

a If damage is found:
- repair or replace as necessary.

b if nothing is found:
- Replace the EIU (Ref. AMM TASK 73-25-34-000-040) (Ref. AMM TASK 73-25-34-400-040).
* If the fault continues, replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) (Ref. AMM TASK 78-31-51-400-042).
** If the fault continues, replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) (Ref. AMM TASK 73-21-60-400-001)

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-875

Thrust Reverser remaining fully stowed when commanded to deploy on ENG1

1. Possible Causes

- TR hydraulic tubes
- blocker door latches
- blocker door actuator
- electrical harness
- ECU (4000KS)
- HCU (4101KS)

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
	AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
	AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
R	AMM 78-31-19-210-041	General Visual Inspection of Blocker Door latches,
R		Hinges and Adjacent Structure (Blocker Doors Deployed)
	AMM 78-31-41-210-042	General Visual Inspection of Actuator Rod End Attachments (Blocker Doors Deployed)
	AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
R	AMM 78-31-49-210-002	General Visual Inspection of Hydraulic Tubing and Hoses (Blocker Doors Deployed)
	AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
	AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
	AMM 78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do an operational test of the Thrust Reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message EIU, HCU:

NOTE : If the Thrust Reverser remains fully stowed when commanded to deploy, the ECU triggers the "EIU, HCU" maintenance message instead of "TR LOCK, TR ACT" (due to 2 fault parameters inverted into the ECU software) carry out the following TSM procedure

without take into account the components highlighted into the maintenance message.

- Do a general visual inspection of the TR hydraulic tubes (Ref. AMM TASK 78-31-49-210-002)

(1) If damage is found:
- repair or replace as necessary.

(2) If mothing is found:
- Perform a manual deployment of the blocker door (Ref. AMM TASK 78-32-41-860-001)
- Do a general visual inspection of the blocker door latches, hinges and adjacent structure (Ref. AMM TASK 78-31-19-210-041).

(a) If damage is found:
- repair or replace as necessary.

(b) If nothing is found:
- Do a general visual inspection of blocker door actuator rod end attachments (Ref. AMM TASK 78-31-41-210-042)

1 If damaged is found:
- repair or replace as necessary.

2 if nothing is found:
- Do a detailed visual inspection of the electrical harness (Ref. AMM TASK 78-31-42-210-041)

a If damage is found:
- repair or replace as necessary.

b if nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) (Ref. AMM TASK 73-21-60-400-001)
* If the fault continues, replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) (Ref. AMM TASK 78-31-51-400-042).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-876

Thrust Reverser remaining fully stowed when commanded to deploy on ENG2

1. Possible Causes

- TR hydraulic tubes
- blocker door latches
- blocker door actuator
- electrical harness
- ECU (4000KS)
- HCU (4101KS)

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)
	AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)
	AMM 78-31-00-710-042	Operational Test of the Thrust Reverser System
R	AMM 78-31-19-210-041	General Visual Inspection of Blocker Door latches,
R		Hinges and Adjacent Structure (Blocker Doors Deployed)
	AMM 78-31-41-210-042	General Visual Inspection of Actuator Rod End Attachments (Blocker Doors Deployed)
	AMM 78-31-42-210-041	Detailed Visual Inspection of the electrical Harness
R	AMM 78-31-49-210-002	General Visual Inspection of Hydraulic Tubing and Hoses (Blocker Doors Deployed)
	AMM 78-31-51-000-042	Removal of the Hydraulic Control Unit
	AMM 78-31-51-400-042	Installation of the Hydraulic Control Unit
	AMM 78-32-41-860-001	Manual Deployment of the Blocker Door

3. Fault Confirmation

A. Test

(1) Do an operational test of the Thrust Reverser system (Ref. AMM TASK 78-31-00-710-042).

4. Fault Isolation

A. If the test gives the maintenance message EIU, HCU:

NOTE : If the Thrust Reverser remains fully stowed when commanded to deploy, the ECU triggers the "EIU, HCU" maintenance message instead of "TR LOCK, TR ACT" (due to 2 fault inverted into the ECU software) carry out the following TSM procedure without take into account the components highlighted into the maintenance message.

- Do a general visual inspection of the TR hydraulic tubes (Ref. AMM TASK 78-31-49-210-002)

(1) If damage is found:
- repair or replace as necessary.

(2) If mothing is found:
- Perform a manual deployment of the blocker door (Ref. AMM TASK 78-32-41-860-001)
- Do a general visual inspection of the blocker door latches, hinges and adjacent structure (Ref. AMM TASK 78-31-19-210-041).

(a) If damage is found:
- repair or replace as necessary.

(b) If nothing is found:
- Do a general visual inspection of blocker door actuator rod end attachments (Ref. AMM TASK 78-31-41-210-042)

1 If damaged is found:
- repair or replace as necessary.

2 if nothing is found:
- Do a detailed visual inspection of the electrical harness (Ref. AMM TASK 78-31-42-210-041)

a If damage is found:
- repair or replace as necessary.

b if nothing is found:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) (Ref. AMM TASK 73-21-60-400-001)
* If the fault continues, replace the HCU (4101KS) (Ref. AMM TASK 78-31-51-000-042) (Ref. AMM TASK 78-31-51-400-042).

B. Do the test given in Para. 3.A.

TASK 78-31-00-810-877

Thrust Reverser HCU Pressure-Switch Failed Open on Engine 1

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- thrust reverser harness
- junction box
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-44-000-002	Removal of the Thrust Reverser Harness 238W0908
AMM 71-51-44-400-002	Installation of the Thrust Reverser Harness 238W09098
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)(4000KS)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)(4000KS)
AMM 78-31-00-710-040	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-040	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-040	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do an operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-040).

4. Fault Isolation

A. This fault message is generated if there is an HCU pressure switch failed in the open position.

(1) If the test gives the maintenance message TR PR SW, J5+J6, ECU:
- get access to the HCU,
- disconnect the harnesses J5 and J6 from the HCU pressure switch (4102KS),
- install jumper wires between pins 2 and 3 on the harness J5 connector and between pins 4 and 5 on the harness J6 connector,
- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check at each harness connector to the ECU (Ref. ASM 73-25/16) between:

. pins 12 and 13 (<5 ohms)
. pins 12 and 11 (>10 megohms)
. pin 12 and the ground (>10 megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-040) and (Ref. AMM TASK 78-31-16-400-040).

(b) If the resistance values are out of the specified limits:
- do a continuity and insulation check of the harnesses between the ECU and the HCU pressure switch,
- repair or replace the defective harness J5 or harness J6 or thrust reverser harness or junction box (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(c) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message TR PR SW, J5+J6, ECU; this is indicative of an intermittent fault that may be caused by defective electrical contacts in the harnesses and junction box between the ECU and the HCU:
- do a check of the harnesses J5 and J6 and the thrust reverser harnesses and the junction box between the ECU and the HCU for correct condition,
- do a check of the connectors for looseness, bent pins, corrosion or contamination.

(a) If damage is found:
- clean, repair or replace as required (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(b) If no damage is found and fault continues while maintenance message is never confirmed during the test:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-040) and (Ref. AMM TASK 78-31-16-400-040).

(c) If the fault continues:
- repair or replace the defective harnesses J5 or J6 or thrust reverser harness (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(d) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.

TASK 78-31-00-810-878

Thrust Reverser HCU Pressure-Switch Failed Open on Engine 2

1. Possible Causes

- PRESS SW-HCU (4102KS)
- harness J5
- harness J6
- thrust reverser harness
- junction box
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-51-44-000-002	Removal of the Thrust Reverser Harness 238W0908
AMM 71-51-44-400-002	Installation of the Thrust Reverser Harness 238W09098
AMM 73-21-60-000-001	Removal of the Electronic Control Unit (ECU)(4000KS)
AMM 73-21-60-400-001	Installation of the Electronic Control Unit (ECU)(4000KS)
AMM 78-31-00-710-040	Operational Test of the Thrust Reverser System
AMM 78-31-16-000-040	Removal of the Hydraulic Control Unit Pressure Switch (4102KS)
AMM 78-31-16-400-040	Installation of the Hydraulic Control Unit Pressure Switch (4102KS)
ASM 73-25/16	

3. Fault Confirmation

A. Do an operational test of the thrust reverser system (Ref. AMM TASK 78-31-00-710-040).

4. Fault Isolation

A. This fault message is generated if there is an HCU pressure switch failed in the open position.

(1) If the test gives the maintenance message TR PR SW, J5+J6, ECU:
- get access to the HCU,
- disconnect the harnesses J5 and J6 from the HCU pressure switch (4102KS),
- install jumper wires between pins 2 and 3 on the harness J5 connector and between pins 4 and 5 on the harness J6 connector,
- disconnect the harnesses J5 and J6 from the ECU (4000KS) and do a resistance check at each harness connector to the ECU (Ref. ASM 73-25/16) between:

. pins 12 and 13 (<5 ohms)
. pins 12 and 11 (>10 megohms)
. pin 12 and the ground (>10 megohms).

(a) If the resistance values are in the specified limits:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-040) and (Ref. AMM TASK 78-31-16-400-040).

(b) If the resistance values are out of the specified limits:
- do a continuity and insulation check of the harnesses between the ECU and the HCU pressure switch,
- repair or replace the defective harness J5 or harness J6 or thrust reverser harness or junction box (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(c) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the test does not give the maintenance message TR PR SW, J5+J6, ECU; this is indicative of an intermittent fault that may be caused by defective electrical contacts in the harnesses and junction box between the ECU and the HCU:
- do a check of the harnesses J5 and J6 and the thrust reverser harnesses and the junction box between the ECU and the HCU for correct condition,
- do a check of the connectors for looseness, bent pins, corrosion or contamination.

(a) If damage is found:
- clean, repair or replace as required (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(b) If no damage is found and fault continues while maintenance message is never confirmed during the test:
- replace the PRESS SW-HCU (4102KS) (Ref. AMM TASK 78-31-16-000-040) and (Ref. AMM TASK 78-31-16-400-040).

(c) If the fault continues:
- repair or replace the defective harnesses J5 or J6 or thrust reverser harness (Ref. AMM TASK 71-51-44-000-002) and (Ref. AMM TASK 71-51-44-400-002).

(d) If the fault continues:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

B. Do the test given in Para. 3.A.

(1) No additional maintenance action is required if the fault is not confirmed.

(2) Repeat the fault isolation procedure if the fault continues.