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 80		
L.E.P. 1- 1	REVISED TO REFLECT THIS REVISION INDICATING NEW,REVISED, AND/OR DELETED PAGES	
80-00-00 211	EFFECTIVITY UPDATED (THROUGHOUT THE TEXT)	201-225, 227-227, 229-239, 241-282, 284-299, 426-499, 503-549, 551-599, 701-749,

Printed in France

CHAPTER 80

STARTING

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

CHAPTER 80

STARTING

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STARTING

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	WARNINGS/MALFUNCTIONS	CFDS FAULT MESSAGES				FAULT ISOLATION PROCEDURE
		SOURCE	MESSAGE	ATA	C	
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TASK 80-00-00-810-829

Failure of the Ignition System on Engine 1

1. Possible Causes

- EIU-1 (1KS1)
- ECU (4000KS)
- J1 wiring
- J2 wiring
- right spark igniter
- left spark igniter
- right ignition lead
- left ignition lead
- lower ignition exciter
- upper ignition exciter

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 71-00-00-710-003	Engine Automatic Start
	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 73-25-34-000-040	Removal of the Engine Interface Unit (EIU) (1KS1,1KS2)
	AMM 73-25-34-400-040	Installation of the Engine Interface Unit (EIU) (1KS1,1KS2)
	AMM 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
	AMM 74-00-00-710-043	Operational Test of the Ignition System
	AMM 74-11-10-000-002	Removal of the Ignition Exciter (4000JH1, 4000JH2)
	AMM 74-11-10-400-002	Installation of the Ignition Exciter (4000JH1, 4000JH2)
R	AMM 74-21-10-000-002	Removal of the Right Ignition Lead
R	AMM 74-21-10-400-002	Installation of the Right Ignition Lead
R	AMM 74-21-20-000-002	Removal of the Left Ignition Lead
R	AMM 74-21-20-400-002	Installation of the Left Ignition Lead
	AMM 74-21-30-000-002	Removal of the Spark Igniter
	AMM 74-21-30-400-002	Installation of the Spark Igniter
	ASM 74-31/01	

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test does not give a maintenance message:
- do an operational test of the ignition system to do an aural check of the spark igniter operation (Ref. AMM TASK 74-00-00-710-043).

(1) If the spark igniter operates correctly:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the spark igniter does not operate correctly:
- do a check for open or short to ground of the J1 wiring between the ECU (4000KS) and the upper ignition exciter (Ref. ASM 74-31/01)
- do a check for open or short to ground of the J2 wiring between the ECU (4000KS) and the lower ignition exciter (Ref. ASM 74-31/01).

(a) If the wiring is not correct:
- repair the above wiring.

(b) If the wiring is correct:
- replace the right spark igniter or
- replace the left spark igniter (Ref. AMM TASK 74-21-30-000-002) and (Ref. AMM TASK 74-21-30-400-002).

1 If the fault continues:
- replace the right ignition lead or
- replace the left ignition lead (Ref. AMM TASK 74-21-10-000-002) and (Ref. AMM TASK 74-21-10-400-002) or (Ref. AMM TASK 74-21-20-000-002) and (Ref. AMM TASK 74-21-20-400-002).

a If the fault continues:
- replace the lower ignition exciter
- replace the upper ignition exciter (Ref. AMM TASK 74-11-10-000-002) and (Ref. AMM TASK 74-11-10-400-002).

b If the fault continues:
- make sure that there is no ground signal at the EIU1 (1KS1) pin AA/5B (Ref. ASM 74-31/01).

c 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).

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 an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

TASK 80-00-00-810-830

Failure of the Ignition System on Engine 2

1. Possible Causes

- EIU-2 (1KS2)
- ECU (4000KS)
- J1 wiring
- J2 wiring
- right spark igniter
- left spark igniter
- right ignition lead
- left ignition lead
- lower ignition exciter
- upper ignition exciter

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 71-00-00-710-003	Engine Automatic Start
	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 73-25-34-000-040	Removal of the Engine Interface Unit (EIU) (1KS1,1KS2)
	AMM 73-25-34-400-040	Installation of the Engine Interface Unit (EIU) (1KS1,1KS2)
	AMM 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
	AMM 74-00-00-710-043	Operational Test of the Ignition System
	AMM 74-11-10-000-002	Removal of the Ignition Exciter (4000JH1, 4000JH2)
	AMM 74-11-10-400-002	Installation of the Ignition Exciter (4000JH1, 4000JH2)
R	AMM 74-21-10-000-002	Removal of the Right Ignition Lead
R	AMM 74-21-10-400-002	Installation of the Right Ignition Lead
R	AMM 74-21-20-000-002	Removal of the Left Ignition Lead
R	AMM 74-21-20-400-002	Installation of the Left Ignition Lead
	AMM 74-21-30-000-002	Removal of the Spark Igniter
	AMM 74-21-30-400-002	Installation of the Spark Igniter
	ASM 74-31/01	

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test does not give a maintenance message:
- do an operational test of the ignition system to do an aural check of the spark igniter operation (Ref. AMM TASK 74-00-00-710-043).

(1) If the spark igniter operates correctly:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

(2) If the spark igniter does not operate correctly:
- do a check for open or short to ground of the J1 wiring between the ECU (4000KS) and the upper ignition exciter (Ref. ASM 74-31/01)
- do a check for open or short to ground of the J2 wiring between the ECU(4000KS) and the lower ignition exciter (Ref. ASM 74-31/01).

(a) If the wiring is not correct:
- repair the above wiring.

(b) If the wiring is correct:
- replace the right spark igniter or
- replace the left spark igniter or (Ref. AMM TASK 74-21-30-000-002) and (Ref. AMM TASK 74-21-30-400-002).

1 If the fault continues:
- replace the right ignition lead or
- replace the left ignition lead (Ref. AMM TASK 74-21-10-000-002) and (Ref. AMM TASK 74-21-10-400-002) or (Ref. AMM TASK 74-21-20-000-002) and (Ref. AMM TASK 74-21-20-400-002).

a If the fault continues:
- replace the lower ignition exciter
- replace the upper ignition exciter (Ref. AMM TASK 74-11-10-000-002) and (Ref. AMM TASK 74-11-10-400-002).

b If the fault continues:
- make sure that there is no ground signal at the EIU2 (1KS2) pin AA/5B (Ref. ASM 74-31/01).

c 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).

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 an engine automatic start procedure indication (Ref. AMM TASK 71-00-00-710-003) .

TASK 80-00-00-810-831

Operation Time for the Starter More Than the Limits, on Engine 1 or 2

1. Possible Causes

- pneumatic starter
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-00-00-710-003	Engine Automatic Start
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)
R AMM 73-29-00-710-040 R	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-10-000-002	Removal of the Pneumatic Starter
AMM 80-11-10-400-002	Installation of the Pneumatic Starter

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC on the ground (wirh engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test does not give a maintenance message:
- on the lower ECAM display unit, do a check for low pressure in the starter air duct (at least 30 PSIG)
- replace the pneumatic starter (Ref. AMM TASK 80-11-10-000-002) and (Ref. AMM TASK 80-11-10-400-002).

(1) 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 an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

TASK 80-00-00-810-832

EGT Above the Limits on Engine 1 or 2

1. Possible Causes

- FWC-1 (1WW1)
- FWC-2 (1WW2)
- lower left-hand thermocouple lead assembly
- lower right-hand thermocouple lead assembly
- upper left-hand thermocouple lead assembly
- three-probe thermocouple lead assembly
- upper extension lead
- lower extension lead
- main junction box assembly
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 31-53-34-000-001	Removal of the Flight Warning Computer (FWC) (1WW1,1WW2)
	AMM 31-53-34-400-001	Installation of the Flight Warning Computer (FWC) (1WW1,1WW2)
	AMM 71-00-00-710-006	Minimum Idle Check
	AMM 72-00-00-200-008	Inspection/Check After the Engine has Exceeded the Operational Limits
	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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
	AMM 77-21-10-000-008	Removal of the Upper Extension Lead
	AMM 77-21-10-000-009	Removal of the Lower Extension Lead
R	AMM 77-21-10-000-025	Removal of the Main Junction Box
	AMM 77-21-10-000-026	Removal of the Upper Right Thermocouple Lead Assembly
	AMM 77-21-10-000-027	Removal of the Lower Left Thermocouple Lead Assembly
	AMM 77-21-10-000-028	Removal of the Upper Left Thermocouple Lead Assembly
	AMM 77-21-10-000-029	Removal of the Lower Right Thermocouple Lead Assembly
	AMM 77-21-10-200-002	Inspection/Check of the T495 Thermocouple Wiring Harness
	AMM 77-21-10-400-008	Installation of the Upper Extension Lead
	AMM 77-21-10-400-009	Installation of the Lower Extension Lead
R	AMM 77-21-10-400-025	Installation of the Main Junction Box
	AMM 77-21-10-400-026	Installation of the Upper Right Thermocouple Lead Assembly

REFERENCE		DESIGNATION
AMM	77-21-10-400-027	Installation of the Lower Left Thermocouple Lead Assembly
AMM	77-21-10-400-028	Installation of the Upper Left Thermocouple Lead Assembly
R AMM	77-21-10-400-029	Installation of the Lower Right Thermocouple Lead Assembly
AMM	80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM	80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Not applicable, the fault is evident.

4. Fault Isolation

A. If the fault symptom is identified by the message START FAULT-EGT OVERLIMIT on the upper ECAM display unit and if the EGT is more than 725°C:

(1) Do the inspection/check after overshoot of engine operational limits (Ref. AMM TASK 72-00-00-200-008).

(2) Do the operational test of the FADEC on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

(3) Do a check of the air pressure for the starter (at least 30 PSIG).

(4) Replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

(5) Do an inspection/check of the T495 thermocouple wiring harness for isolation of the defective part (Ref. AMM TASK 77-21-10-200-002):
- if the electrical check of the three two-probe lead assemblies is not correct, replace the defective thermocouple:
  . the lower left-hand thermocouple lead assembly (Ref. AMM TASK 77-21-10-000-027) and (Ref. AMM TASK 77-21-10-400-027) or
  . the lower right-hand thermocouple lead assembly (Ref. AMM TASK 77-21-10-000-029) and (Ref. AMM TASK 77-21-10-400-029) or
  . the upper left-hand thermocouple lead assembly (Ref. AMM TASK 77-21-10-000-028) and (Ref. AMM TASK 77-21-10-400-028)
- if the electrical check of the three-probe lead assembly is not correct:
  . replace three-probe thermocouple lead assembly (Ref. AMM TASK 77-21-10-000-026) and (Ref. AMM TASK 77-21-10-400-026), (Ref. AMM TASK 77-21-10-000-027) and (Ref. AMM TASK 77-21-10-400-027), (Ref. AMM

TASK 77-21-10-000-028) and (Ref. AMM TASK 77-21-10-400-028), (Ref. AMM TASK 77-21-10-000-029) and (Ref. AMM TASK 77-21-10-400-029).
- if the electrical check of the upper extension lead is not correct:
. replace the upper extension lead (Ref. AMM TASK 77-21-10-000-008) and (Ref. AMM TASK 77-21-10-400-008)
- if the electrical check of the lower extension lead is not correct:
. replace the lower extension lead (Ref. AMM TASK 77-21-10-000-009) and (Ref. AMM TASK 77-21-10-400-009).
- if the electrical check of the main junction box assembly is not correct:
. replace the main junction box assembly (Ref. AMM TASK 77-21-10-000-025) and (Ref. AMM TASK 77-21-10-400-025).

(6) 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).

(7) If the fault continues:
- replace the FWC-1 (1WW1) or the FWC-2 (1WW2) (Ref. AMM TASK 31-53-34-000-001) and (Ref. AMM TASK 31-53-34-400-001).

B. Do a minimum idle check to make sure that all engine instruments give the correct indication (Ref. AMM TASK 71-00-00-710-006).

TASK 80-00-00-810-833

Stall of the Engine 1 or 2

1. Possible Causes

- tail wind conditions and/or high altitude airport
- N2 SNSR
- PS3
- VSV
- T25
- hydromechanical unit (HMU)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
70-00-00-810-801	Engine Failure(s)
AMM 71-00-00-710-006	Minimum Idle Check
AMM 72-00-00-200-008	Inspection/Check After the Engine has Exceeded the Operational Limits
AMM 73-21-10-000-002	Removal of the Hydromechanical Unit (HMU)
AMM 73-21-10-400-002	Installation of the Hydromechanical Unit (HMU)
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 73-21-60-740-007	Correct Time Limited Faults (Non Asterisked) of the Engine Scheduled Maintenance Report
AMM 73-21-60-740-026	Read the CLASS 3 REPORT
AMM 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine Non motoring)
AMM 75-32-10-210-002	Inspection of the Variable Stator Vane Actuator

3. Fault Confirmation

A. Test

(1) Not applicable, the confirmation can cause damage to the engine.

4. Fault Isolation

R **ON A/C 201-225, 227-227, 229-239, 241-282, 284-299, 426-499, 503-549,
R 551-599, 701-749,

A. This warning is set if a stall condition is detected by the ECU before the engine N2 speed reaches 58 per cent.
This warning may be caused by tail wind conditions and/or high altitude airport.

(1) If this was the case, an engine restart attempt should be carried out in automatic mode.
- If an engine restart attempt was successful, no additional maintenance action is required.

(2) If trouble duplicates:
- do not interrupt the start sequence and leave the ECU authority for 2 additional start attempts (follow ECAM procedure).

(3) Consider different A/C heading for engine start if possible.
If above conditions do not apply:
- do a FADEC non motoring test (Ref. AMM TASK 73-29-00-710-040).

(a) Look for failure messages including the following words in FADEC test results and class 3 report (Ref. AMM TASK 73-21-60-740-026) : N2 SNSR, PS3, VSV, T25.

1 If any of those messages is present:
- do the trouble shooting procedure (Ref. TASK 70-00-00-810-801).

2 If no message is found:
- do the engine post stall inspection (Ref. AMM TASK 72-00-00-200-008).

(4) Do a detailed visual inspection of the VSV control linkage (Ref. AMM TASK 75-32-10-210-002) and look for any broken or loose components:
- repair or replace as required.

(5) If nothing is found:
- replace the hydromechanical unit (HMU) (Ref. AMM TASK 73-21-10-000-002) and (Ref. AMM TASK 73-21-10-400-002).

(6) If trouble repeats:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

**ON A/C 240-240, 283-283,

A. This warning is set if a stall condition is detected by the ECU before the engine N2 speed reaches 58 per cent.
This warning may be caused by tail wind conditions and/or high altitude airport.

(1) If this was the case, an engine restart attempt should be carried out in automatic mode.
- If an engine restart attempt was successful, no additional maintenance action is required.

(2) If trouble duplicates:
- do not interrupt the start sequence and leave the ECU authority for 2 additional start attempts (follow ECAM procedure).

(3) Consider different A/C heading for engine start if possible.
If above conditions do not apply:
- do a FADEC non motoring test (Ref. AMM TASK 73-29-00-710-040).

(a) Look for failure messages including the following words in FADEC test results and FADEC scheduled maintenance report (Ref. AMM TASK 73-21-60-740-007): N2 SNSR, PS3, VSV, T25.

1 If any of those messages is present:
- do the trouble shooting procedure (Ref. TASK 70-00-00-810-801).

2 If no message is found:
- do the engine post stall inspection (Ref. AMM TASK 72-00-00-200-008).

(4) Do a detailed visual inspection of the VSV control linkage (Ref. AMM TASK 75-32-10-210-002) and look for any broken or loose components:
- repair or replace as required.

(5) If nothing is found:
- replace the hydromechanical unit (HMU) (Ref. AMM TASK 73-21-10-000-002) and (Ref. AMM TASK 73-21-10-400-002).

(6) If trouble repeats:
- replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and (Ref. AMM TASK 73-21-60-400-001).

**ON A/C ALL

B. Do a minimum idle check to make sure that all engine instruments give the correct indication (Ref. AMM TASK 71-00-00-710-006).

TASK 80-00-00-810-834

Slow Start Before Light off Sequence, on Engine 1 or 2

1. Possible Causes

R - OVERPRESSURE VALVE (OPV)(5HA)
- engine
- pneumatic starter
- starter shut off valve

2. Job Set-up Information

A. Referenced Information

REFERENCE		DESIGNATION
R AMM	36-11-53-720-001	Functional Test of the Overpressure Valve 5HA1 (5HA2) with the Bleed Test Set P/N 98D36003000000 or P/N 98F36003002000
AMM	36-12-51-200-001	Remove and Check Auxiliary Power Unit Bleed Check-Valve (7260HM) for Condition
AMM	71-00-00-000-042	Removal of the Power Plant
AMM	71-00-00-400-042	Installation of the Power Plant
AMM	71-00-00-710-003	Engine Automatic Start
AMM	80-11-10-000-002	Removal of the Pneumatic Starter
AMM	80-11-10-400-002	Installation of the Pneumatic Starter
AMM	80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM	80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Not applicable, the fault is evident.

4. Fault Isolation

A. If the fault symptom is identified by the crew observation: ENG1 or 2 - STARTING - slow start before light off sequence:
- on the lower ECAM display unit, do a check of the starter air pressure (at least 25 PSI)
- if no, make sure that the pack valves are off. Do a check to make sure that the air source pressure is sufficient (ground supply unit, APU).

R (1) Do the check of the OVERPRESSURE VALVE (OPV)(5HA), for possible
R blockage or stuck in partial open position (Ref. AMM TASK 36-11-53-
R 720-001).

R (2) If the fault continues:
- do a check of the magnetic chip detectors for unwanted particles .

R (3) If the fault continues:
- do a check to make sure that the core turns freely by handcranking.

(a) If a blockage occurs:
- try to turn the core each 15 mn for no more than 8 hours.

(b) After you tried this, if again it is not possible to turn the core:
- replace the engine (Ref. AMM TASK 71-00-00-000-042) and (Ref. AMM TASK 71-00-00-400-042).

R (4) If the fault continues:
- do a check of the APU bleed check valve (Ref. AMM TASK 36-12-51-200-001).

R (5) If the fault continues:
- replace the pneumatic starter (Ref. AMM TASK 80-11-10-000-002) and (Ref. AMM TASK 80-11-10-400-002).

R (6) If the fault continues:
- replace the starter shut off valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

B. Do an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

TASK 80-00-00-810-835

Failure of the Starter Shutoff Valve on Engine 1

1. Possible Causes

- EIU-1 (1KS1)
- aircraft wiring
- CTL SW-ENG/MASTER 1 (3KC)
- SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
AMM	31-10-00-700-001	Test Program after Removal/Installation of a VU panel
AMM	71-00-00-710-003	Engine Automatic Start
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	73-25-34-000-040	Removal of the Engine Interface Unit (EIU) (1KS1,1KS2)
AMM	73-25-34-400-040	Installation of the Engine Interface Unit (EIU) (1KS1,1KS2)
ASM	74-31/01	
R AWM	73-25-09	
R AWM	76-12-01	

3. Fault Confirmation

A. Test

(1) Not applicable, the fault is evident.

4. Fault Isolation

A. If the fault symptom is identified by the crew observation : ENG1 STARTING - opening of the starter shutoff valve not possible in automatic mode:

(1) Remove the panel 115VU and do a check and repair the aircraft wiring between:
- the ENG/MASTER 1 control switch (3KC) and the EIU1 (1KS1), pins AA/5A, 5E to pins 2A, 3A
- the ENG/MODE/CRANK/AUTO IGN/IGN selector switch (6KS) and the EIU1 (1KS1), pins AA/1A, 1B, 1C to pins 2, 3, 4.

(2) Do a check and repair the aircraft wiring between the EIU1 (1KS1) and the ECU (4000KS) (Ref. ASM 74-31/01).

(3) 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).

(4) If the fault continues:
R - replace the CTL SW-ENG/MASTER 1 (3KC) (Ref. AWM 76-12-01) and/or
R - replace the SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS) (Ref. AWM 73-
R 25-09).
- install the panel 115VU and do a test program after removal/installation of a VU panel. (Ref. AMM TASK 31-10-00-700-001)

(5) 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 starter shutoff valve does not open in manual mode:

(1) Do a check and repair the aircraft wiring between the ENG/MAN START/1 pushbutton switch (9KS1) and the EIU1 (1KS1), pin AA/1F to pin AA3.

(2) Do a check and repair the aircraft wiring between the EIU1 (1KS1) and the ECU (4000KS) (Ref. ASM 74-31/01).

(3) 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).

(4) If the fault continues:
- replace the CTL SW-ENG/MASTER 1 (3KC) and or
- replace the SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS).

(5) 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).

C. Do an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

TASK 80-00-00-810-836

Failure of the Starter Shutoff Valve on Engine 2

1. Possible Causes

- EIU-2 (1KS2)
- aircraft wiring
- CTL SW-ENG/MASTER2 (2KS)
- SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS)
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

	REFERENCE	DESIGNATION
	AMM 31-10-00-700-001	Test Program after Removal/Installation of a VU panel
	AMM 71-00-00-710-003	Engine Automatic Start
	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 73-25-34-000-040	Removal of the Engine Interface Unit (EIU) (1KS1,1KS2)
	AMM 73-25-34-400-040	Installation of the Engine Interface Unit (EIU) (1KS1,1KS2)
	ASM 74-31/01	
R	AWM 73-25-09	
R	AWM 76-12-01	

3. Fault Confirmation

A. Test

(1) Not applicable, the fault is evident.

4. Fault Isolation

A. If the fault symptom is identified by the crew observation: ENG2 STARTING
- Opening of the starter shutoff valve not possible in automatic mode.

(1) Remove the panel 115VU and do a check and repair the aircraft wiring between:
- the ENG/MASTER2 control switch (2KC) and the EIU2 (1KS2), pins AA/5A, 5E to pins 2A, 3A
- the ENG/MODE/CRANK/AUTO IGN/IGN selector switch (6KS) and the EIU2 (1KS2), pins AA/1A, 1B, 1C to pins 2, 3, 4.

(2) Do a check and repair the aircraft wiring between the EIU2 (1KS2) and the ECU (4000KS) (Ref. ASM 74-31/01).

(3) 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).

(4) If the fault continues:
R - replace the CTL SW-ENG/MASTER2 (2KS) (Ref. AWM 76-12-01) and/or
R - replace the SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS) (Ref. AWM 73-
R 25-09).
- install the panel 115VU and do a test program after removal/installation of a VU panel. (Ref. AMM TASK 31-10-00-700-001)

(5) 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 starter shutoff valve does not open in manual mode:

(1) Do a check and repair the aircraft wiring between the ENG/MAN START/2 pushbutton switch (9KS2) and the EIU2 (1KS2), pin AA/1F to pin AA3.

(2) Do a check and repair the aircraft wiring between the EIU2 (1KS2) and the ECU (4000KS) (Ref. ASM 74-31/01).

(3) 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).

(4) If the fault continues:
- replace the CTL SW-ENG/MASTER2 (2KS) and/or
- replace the SEL SW-ENG/MODE/CRANK/AUTO IGN/IGN (6KS).

(5) 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).

C. Do an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

TASK 80-00-00-810-837

N1 Rotor does not Turn during the Start of the Engine 1 or 2

1. Possible Causes

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 71-00-00-710-003	Engine Automatic Start
R AMM 72-21-00-210-006	Inspect Fan Rotor Blades Removed from the Fan Disk.
AMM 72-23-00-210-003	Detailed Inspection of Engine Inlet, Fan Blades, Fan Outlet and Abradable Material

3. Fault Confirmation

A. Test

(1) Not applicable, the fault is evident.

4. Fault Isolation

A. If the fault symptom is identified by the crew observation : ENG1/2 STARTING-N1 rotor does not turn during the start:
- do an inspection of the engine inlet and exhaust areas for damage.

(1) If the fault continues:
- do a check to make sure that there is no sign of interference/binding between the fan blade and the fan case abradable.

(a) If yes:
- release the caught blade(s). To do this, use your hand force to move the blade tip(s) forward and circumferentially
- do a check of the fan blade(s) (Ref. AMM TASK 72-21-00-210-006)
- do a check of the abradable shroud (Ref. AMM TASK 72-23-00-210-003).

(2) If the fault continues:
- try to manually turn the N1 rotor.

(a) If it is not possible to turn the N1 rotor:
- stop 30 minutes before you try to manually turn again the rotor.

(3) If the fault continues:
- do a check of the magnetic chip detectors for unwanted particles .

B. Do an engine automatic start procedure (Ref. AMM TASK 71-00-00-710-003).

R TASK 80-00-00-810-852

R Engine Start Failure

R 1. Possible Causes

R 2. Job Set-up Information

R A. Referenced Information

REFERENCE	DESIGNATION
70-00-00-810-805	Display of an Operational Message on the ECAM
74-00-00-810-803	Failure of the Ignition 2 System - Engine 1 - Channel A or Channel B
74-00-00-810-804	Failure of the Ignition 2 System - Engine 2 - Channel A or Channel B
80-00-00-810-829	Failure of the Ignition System on Engine 1
80-00-00-810-830	Failure of the Ignition System on Engine 2
80-00-00-810-831	Operation Time for the Starter More Than the Limits, on Engine 1 or 2
80-00-00-810-832	EGT Above the Limits on Engine 1 or 2
80-00-00-810-833	Stall of the Engine 1 or 2

R 3. Fault Confirmation

R A. On the EWD, check for the second line of the ECAM warning

R 4. Fault Isolation

R A. If the second line of the ECAM warning is:

R (1) ENG X EGT OVERLIMIT :
R (Ref. TASK 80-00-00-810-832)

R (2) ENG X IGNITION FAULT :

R (a) With no fault message associated
R - for engine 1,
R (Ref. TASK 80-00-00-810-829)
R - for engine 2,
R (Ref. TASK 80-00-00-810-830)

R (b) With fault message IGN 2, ECU ENGXX associated
R - for engine 1,
R (Ref. TASK 74-00-00-810-803)
R - for engine 2,
R (Ref. TASK 74-00-00-810-804)

R (3) ENG X STALL :
R (Ref. TASK 80-00-00-810-833)

R (4) LO START AIR PRESS or STARTER TIME EXCEEDED :
R (Ref. TASK 80-00-00-810-831)

R (5) THR LEVER NOT AT IDLE :
R (Ref. TASK 70-00-00-810-805)

TASK 80-11-00-810-801

Failure of the Starter Shutoff Valve Switch on Engine 1

1. Possible Causes

R - starter shutoff valve
R - ECU (4000KS)
R

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-210-001	Visual Inspection of the Wiring Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Do the operational test of the FADEC 1A on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. This failure message is generated if channel A and B switches of the
R starter shutoff valve disagree.

(1) If the failure message SAV (SW) J9/J10, ECU* is not confirmed:
R

R (a) No maintenance action is required.

(2) If the failure message SAV (SW) J9/J10, ECU* is not confirmed but is repetitive:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

R (a) If the failure continues during the subsequent flights:
R - replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and
R (Ref. AMM TASK 73-21-60-400-001).

R (b) If the failure continues during the subsequent flights:
- replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042).
- replace the harness HJ10 (channel B) (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

(3) If the failure message SAV (SW) J9/J10, ECU* is confirmed:
- disconnect the harnesses HJ9 (channel A) and HJ10 (channel B) from
R the starter shutoff valve.

(a) Visually examine the receptacles and the connectors for damaged
R pins or contamination (Ref. AMM TASK 73-21-50-210-001).

R 1 If damage is found:
- repair or replace as required.

R 2 If no damage is found:
R - do an electrical resistance test through the starter shutoff
R valve for both channels between:
. pin 1 and pin 2 (15 to 60 ohms)
. pin 1 and pin 5 (> 10 megohms)
. pin 1 and the ground (> 10 megohms).

R a If the resistance values are out of the specified limits:
R - replace the starter shutoff valve (Ref. AMM TASK 80-11-
R 20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

b If the resistance values are in the specified limits:
R - connect the harnesses HJ9 (channel A) and HJ10 (channel
R B) to the starter shutoff valve and continue the trouble
R shooting procedure.

R (b) Disconnect the harnesses HJ9 (channel A) and HJ10 (channel B)
R from the ECU (4000KS) and visually examine the receptacles and
R the connectors for damaged pins or contamination (Ref. AMM TASK 73-21-50-210-001).

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

2 If no damage is found:
R - do an electrical resistance test through each harness HJ9
R and HJ10 between:
. pin 11 and pin 12 (15 to 60 ohms)
. pin 11 and pin 3 (>10 megohms)
. pin 11 and the ground (>10 megohms).

R a 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 - repeat the fault confirmation given in Para.3.A if the
R fault continues.

R b If the resistance values are out of the specified limits:
R - replace the harness with the resistance values out of the
R limits:
. harness HJ9 (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042),
. harness HJ10 (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

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 80-11-00-810-802

Failure of the Starter Shutoff Valve Switch on Engine 2

1. Possible Causes

R - starter shutoff valve
R - ECU (4000KS)
R

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-210-001	Visual Inspection of the Wiring Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Do the operational test of the FADEC 2A on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. This failure message is generated if channel A and B switches of the
R starter shutoff valve disagree.

(1) If the failure message SAV (SW) J9/J10, ECU* is not confirmed:
R

R (a) No maintenance action is required.

(2) If the failure message SAV (SW) J9/J10, ECU* is not confirmed but is repetitive:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

R (a) If the failure continues during the subsequent flights:
R - replace the ECU (4000KS) (Ref. AMM TASK 73-21-60-000-001) and
R (Ref. AMM TASK 73-21-60-400-001).

R (b) If the failure continues during the subsequent flights:
- replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042).
- replace the harness HJ10 (channel B) (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

(3) If the failure message SAV (SW) J9/J10, ECU* is confirmed:
- disconnect the harnesses HJ9 (channel A) and HJ10 (channel B) from
R the starter shutoff valve.

(a) Visually examine the receptacles and the connectors for damaged
R pins or contamination (Ref. AMM TASK 73-21-50-210-001).

R 1 If damage is found:
- repair or replace as required.

2 if no damage is found:
R - do an electrical resistance test through the starter shutoff
R valve for both channels between:
. pin 1 and pin 2 (15 to 60 ohms)
. pin 1 and pin 5 (> 10 megohms)
. pin 1 and the ground (> 10 megohms).

R a If the resistance values are out of the specified limits:
R - replace the starter shutoff valve (Ref. AMM TASK 80-11-
R 20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

b If the resistance values are in the specified limits:
R - connect the harnesses HJ9 (channel A) and HJ10 (channel
R B) to the starter shutoff valve and continue the trouble
R shooting procedure.

R (b) Disconnect the harnesses HJ9 (channel A) and HJ10 (channel B)
R from the ECU (4000KS) and visually examine the receptacles and the connectors for damaged pins and contamination (Ref. AMM TASK 73-21-50-210-001).

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

2 If no damage is found:
R - do an electrical resistance test through each harness HJ9
R and HJ10 between:
. pin 11 and pin 12 (15 to 60 ohms)
. pin 11 and pin 3 (>10 megohms)
. pin 11 and the ground (>10 megohms).

R a 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 - repeat the fault confirmation given in Para.3.A if the
R fault continues.

R b If the resistance values are out of the specified limits:
R - replace the harness with the resistance values out of the
R limits:
. harness HJ9 (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042),
. harness HJ10 (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

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 80-11-00-810-803

Failure of the Starter Shutoff Valve - Engine 1 - Channel A

1. Possible Causes

- starter shutoff valve
- harness HJ9

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-210-001	Visual Inspection of the Wiring Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
R AMM 80-11-00-040-045	Manually Operate the Starter Valve
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC 1A on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. This fault is generated if the actual starter shutoff valve position and the demanded valve position disagree for a set time interval.

NOTE : The starter air duct pressure is expected to be greater than 25 psi (1.72 bar).
If the starter air duct pressure is less than 25 psi:
- do the trouble shooting of the bleed air system (TSM chapter 49 if the APU was used),
- check that supplying engine speed was correct if cross bleed start was performed (increase engine speed for higher bleed pressure).

(1) If the failure message START AIR, SAV is not confirmed:

(a) No maintenance action is required.

(2) If the failure message START AIR, SAV is not confirmed but is repetitive:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

(a) If the fault continues during the subsequent flights:
- 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 during the subsequent flights:
- replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042).

(3) If the failure message START AIR, SAV is confirmed:

(a) If freezing conditions are present:
- manually operate the starter shutoff valve (Ref. AMM TASK 80-11-00-040-045).

1 If the starter shutoff valve handle does not move:
- use a heat gun to warm up the starter shutoff valve.

2 If the starter shutoff valve remains stuck:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

(b) If freezing conditions are not present:
- operate the starter shutoff valve (Ref. AMM TASK 80-11-00-040-045).

1 If the starter shutoff valve handle does not move:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

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

3 If the fault continues during the subsequent flights:
- disconnect the harness HJ9 (channel A) from the ECU (4000KS) and visually examine the connector and receptacle of the harness HJ9 (channel A) for damaged pins or contamination (Ref. AMM TASK 73-21-50-210-001).

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

b If no damage is found:
- replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042).

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 80-11-00-810-804

Failure of the Starter Shutoff Valve - Engine 2 - Channel A

1. Possible Causes

- starter shutoff valve
- harness HJ9

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-210-001	Visual Inspection of the Wiring Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
R AMM 80-11-00-040-045	Manually Operate the Starter Valve
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC 2A on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. This fault is generated if the actual starter shutoff valve position and the demanded valve position disagree for a set time interval.

NOTE : The starter air duct pressure is expected to be greater than 25 psi (1.72 bar).
If the starter air duct pressure is less than 25 psi:
- do the trouble shooting of the bleed air system (TSM chapter 49 if the APU was used),
- check that supplying engine speed was correct if cross bleed start was performed (increase engine speed for higher bleed pressure).

R (1) If the failure message START AIR, SAV is not confirmed:

R (a) No maintenance action is required.

R (2) If the failure message START AIR, SAV is not confirmed but is repetitive:
R - replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

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

R (b) If the fault continues during the subsequent flights:
R - replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042).

R (3) If the failure message START AIR, SAV is confirmed:

R (a) If freezing conditions are present:
R - manually operate the starter shutoff valve (Ref. AMM TASK 80-11-00-040-045).

R 1 If the starter shutoff valve handle does not move:
R - use a heat gun to warm up the starter shutoff valve.

R 2 If the starter shutoff valve remains stuck:
R - replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

R (b) If freezing conditions are not present:
R - operate the starter shutoff valve (Ref. AMM TASK 80-11-00-040-045).

R 1 If the starter shutoff valve handle does not move:
R - replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

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

R 3 If the fault continues during the subsequent flights:
R - disconnect the harness HJ9 (channel A) from the ECU (4000KS) and visually examine the connector and receptacle of the harness HJ9 (channel A) for damaged pins or contamination (Ref. AMM TASK 73-21-50-210-001).

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

R b If no damage is found:
R - replace the harness HJ9 (channel A) (Ref. AMM TASK 73-21-
R 50-000-042) and (Ref. AMM TASK 73-21-50-400-042).
R

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 80-11-00-810-805

Failure of the Control of the Starter Shutoff Valve Solenoid through the Channel A on Engine 1

1. Possible Causes

- ECU (4000KS)
- harness J9
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 1A on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SOL), J9, ECU:
- do a check for open or short to ground of the harness J9 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J9/11, 12 to pins J9/1, 2 (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J9 from the ECU (4000KS) and do a check of the ECU resistance cable between:
. pins 11 and 12 (15 to 60 Ohms)
. pins 11 and 3 (> 10 Megohms)
. pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harness J9 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified limits:
- replace the harness J9 (Ref. AMM TASK 73-21-50-000-042) (Ref. AMM TASK 73-21-50-400-042).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-806

Failure of the Control of the Starter Shutoff Valve Solenoid through the Channel B on Engine 1

1. Possible Causes

- ECU (4000KS)
- harness J10
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 1B on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SOL), J10, ECU:
- do a check for open or short to ground of the harness J10 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J10/11, 12 to pins J10/1, 2 (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J10 from the ECU (4000KS) and do a check of the ECU resistance cable between:
. pins 11 and 12 (15 to 60 Ohms)
. pins 11 and 3 (> 10 Megohms)
. pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harness J10 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified limits:
- replace the harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-807

Failure of the Control of the Starter Shutoff Valve Solenoid through the Channel A on Engine 2

1. Possible Causes

- ECU (4000KS)
- harness J9
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 2A on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SOL), J9, ECU:
- do a check for open or short to ground of the harness J9 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J9/11, 12 to pins J9/1, 2 (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J9 from the ECU (4000KS) and do a check of the ECU resistance cable between:
. pins 11 and 12 (15 to 60 Ohms)
. pins 11 and 3 (> 10 Megohms)
. pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harness J9 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified limits:
- replace the harness J9 (Ref. AMM TASK 73-21-50-000-042) (Ref. AMM TASK 73-21-50-400-042).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-808

Failure of the Control of the Starter Shutoff Valve Solenoid through the Channel B on Engine 2

1. Possible Causes

- ECU (4000KS)
- harness J10
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 2B on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SOL), J10, ECU:
- do a check for open or short to ground of the harness J10 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J10/11, 12 to pins J10/1, 2 (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J10 from the ECU (4000KS) and do a check of the ECU resistance cable between:
. pins 11 and 12 (15 to 60 Ohms)
. pins 11 and 3 (> 10 Megohms)
. pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harness J10 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified limits:
- replace the harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-809

Failure of the Control of the Starter Shutoff Valve Solenoids through the two Channels on Engine 1

1. Possible Causes

- ECU (4000KS)
- harness J9
- harness J10
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 1A and 1B on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance messages SAV (SOL), J9, ECU + SAV (SOL), J10, ECU:
- do a check for open or short to ground of the harnesses J9 and J10 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J9 and J10/11, 12 to pins J9 and J10/1, 2 (Ref. ASM 74-31/01).

(1) If one of these wirings is not correct:
- repair the defective above wirings.

(2) If these wirings are correct:
- disconnect the harnesses J9 and J10 from the ECU (4000KS) and do a check of the ECU resistance cables between:
  . pins 11 and 12 (15 to 60 Ohms)
  . pins 11 and 3 (> 10 Megohms)
  . pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harnesses J9 and J10 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified values:
- replace the defective harness J9 (Ref. AMM TASK 73-21-50-000-042) (Ref. AMM TASK 73-21-50-400-042) or harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-810

Failure of the Control of the Starter Shutoff Valve Solenoids through the two Channels on Engine 2

1. Possible Causes

- ECU (4000KS)
- harness J9
- harness J10
- starter shutoff valve

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 2A and 2B on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance messages SAV (SOL), J9, ECU + SAV (SOL), J10, ECU:
- do a check for open or short to ground of the harnesses J9 and J10 between the ECU (4000KS) and the starter shutoff valve solenoid, pins J9 and J10/11, 12 to pins J9 and J10/1, 2 (Ref. ASM 74-31/01).

(1) If one of these wirings is not correct:
- repair the defective above wirings.

(2) If these wirings are correct:
- disconnect the harnesses J9 and J10 from the ECU (4000KS) and do a check of the ECU resistance cables between:
  . pins 11 and 12 (15 to 60 Ohms)
  . pins 11 and 3 (> 10 Megohms)
  . pins 11 and ground (> 10 Megohms).

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

(b) If the resistance values are out of the specified limits:
- disconnect the harnesses J9 and J10 from the starter shutoff valve and do a check of the starter shutoff valve resistance between:
  . pins 1 and 2 (15 to 60 Ohms)
  . pins 1 and 5 (> 10 Megohms)
  . pins 1 and ground (> 10 Megohms).

1 If the resistance values are in the specified values:
- replace the defective harness J9 (Ref. AMM TASK 73-21-50-000-042) (Ref. AMM TASK 73-21-50-400-042) or harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

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

TASK 80-11-00-810-811

Failure of the Starter Shutoff Valve on Engine 1

1. Possible Causes

- starter shutoff valve
- harness J9
- harness J10
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 1B on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SW), J9/J10, ECU or SAV (SW), J9/J10, ECU*:
- do a check for open or short to ground of the harnesses J9 and J10 between the ECU (4000KS) and the stater shutoff valve (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harnesses J9 and J10 from the starter shutoff valve
- install a jumper wire between the pins 3 and 4 on the harnesses J9 and J10
- disconnect the harnesses J9 and J10 from the ECU (4000KS) and do a resistance check of each cable between:
  . pins 9 and 10 (< 5 Ohms)
  . pins 9 and 3 (> 10 Megohms)
  . pin 9 and the ground (> 10 Megohms).

(a) If the resistance values are in the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

(b) If the resistance values are out of the specified limits:
- replace the defective harness J9 (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042) or
- replace the defective harness J10 (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

(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 80-11-00-810-812

Failure of the Starter Shutoff Valve on Engine 2

1. Possible Causes

- starter shutoff valve
- harness J9
- harness J10
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-042	Removal of the HJ9 Harness
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-042	Installation of the HJ9 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the Ground (with Engine non Motoring)
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve
ASM 74-31/01	

3. Fault Confirmation

A. Do the operational test of the FADEC 2B on the ground (with engine non motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message SAV (SW), J9/J10, ECU or SAV (SW), J9/J10, ECU*:
- do a check for open or short to ground of the harnesses J9 and J10 between the ECU (4000KS) and the starter shutoff valve (Ref. ASM 74-31/01).

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harnesses J9 and J10 from the starter shutoff valve
- install a jumper wire between the pins 3 and 4 on the harnesses J9 and J10
- disconnect the harnesses J9 and J10 from the ECU (4000KS) and do a resistance check of each cable between:
  . pins 9 and 10 (< 5 Ohms)
  . pins 9 and 3 (> 10 Megohms)
  . pin 9 and the ground (> 10 Megohms).

(a) If the resistance values are in the specified limits:
- replace the starter shutoff valve (Ref. AMM TASK 80-11-20-000-003) and (Ref. AMM TASK 80-11-20-400-003).

(b) If the resistance values are out of the specified limits:
- replace the defective harness J9 (Ref. AMM TASK 73-21-50-000-042) and (Ref. AMM TASK 73-21-50-400-042) or
- replace the defective harness J10 (Ref. AMM TASK 73-21-50-000-043) and (Ref. AMM TASK 73-21-50-400-043).

(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 80-11-00-810-813

Failure of the Starter Shutoff Valve on Engine 1

1. Possible Causes

- starter shutoff valve (SAV)
- starter
- harness J10
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-10-000-002	Removal of the Pneumatic Starter
AMM 80-11-10-400-002	Installation of the Pneumatic Starter
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC 1B on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message START AIR, SAV:
- do a check for open or short to ground at pins J10/11, 12 of the harness J10 between the ECU (4000KS) and the starter shutoff valve.

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J10 from the ECU (4000KS) and do a check of the ECU resistance cable between:
. pins 11 and 12 (10 to 60 Ohms).

(a) If the resistance values are in the specified limits:
- do a check for low starter air duct pressure.

1 If the starter air duct pressure is in the specified limits (11 PSI < P < 60 PSI):
- replace the starter shutoff valve (SAV) (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003)
- replace the starter (Ref. AMM TASK 80-11-10-000-002) (Ref. AMM TASK 80-11-10-400-002).

(b) If the resistance values are out of the specified limits:
- remove the harness J10 from SAV and do a check of the SAV resistance between:
. pins : 1 and 2 (10 to 60 Ohms).

1 If the resistance values are in the specified limits:
- replace the harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (SAV) (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

(3) 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 80-11-00-810-814

Failure of the Starter Shutoff Valve on Engine 2

1. Possible Causes

- starter shutoff valve (SAV)
- starter
- harness J10
- ECU (4000KS)

2. Job Set-up Information

A. Referenced Information

REFERENCE	DESIGNATION
AMM 73-21-50-000-043	Removal of the HJ10 Harness
AMM 73-21-50-400-043	Installation of the HJ10 Harness
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 73-29-00-710-040	Operational Test of the FADEC on the ground (with Engine Motoring)
AMM 80-11-10-000-002	Removal of the Pneumatic Starter
AMM 80-11-10-400-002	Installation of the Pneumatic Starter
AMM 80-11-20-000-003	Removal of the Starter Shutoff Valve
AMM 80-11-20-400-003	Installation of the Starter Shutoff Valve

3. Fault Confirmation

A. Test

(1) Do the operational test of the FADEC 2B on the ground (with engine motoring) (Ref. AMM TASK 73-29-00-710-040).

4. Fault Isolation

A. If the test gives the maintenance message START AIR, SAV:
- do a check for open or short to ground at pins J10/11, 12 of the harness J10 between the ECU (4000KS) and the stater shutoff valve.

(1) If the wiring is not correct:
- repair the above wiring.

(2) If the wiring is correct:
- disconnect the harness J9 or J10 from the ECU (4000KS) and do a check of the ECU resistance cable between: pins 11 and 12 (10 to 60 Ohms).

(a) If the resistance values are in the specified limits:
- do a check for low starter air duct pressure.

1 If the starter air duct pressure is in the specified limits (11 PSI < P < 60 PSI):
- replace the starter shutoff valve (SAV) (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003)
- replace the starter (Ref. AMM TASK 80-11-10-000-002) (Ref. AMM TASK 80-11-10-400-002).

(b) If the resistance values are out of the specified limits:
- remove the harness J10 from SAV and do a check of the SAV resistance between:
. pins : 1 and 2 (10 to 60 Ohms).

1 If the resistance values are in the specified limits:
- replace the harness J10 (Ref. AMM TASK 73-21-50-000-043) (Ref. AMM TASK 73-21-50-400-043).

2 If the resistance values are out of the specified limits:
- replace the starter shutoff valve (SAV) (Ref. AMM TASK 80-11-20-000-003) (Ref. AMM TASK 80-11-20-400-003).

3 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.(1).