Engineering Order

≫ Lufthansa

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

Title	NEW DEACTIVATION PROCEDURE OF HEATED FLOOR PANELS

Document References	Source Document	ISD: WE22-AMM 25-27: 1
	Source Task	01-MOD
	Maintenance Task	MOD-10192375 (EO 342978)

Maintenance Task Relations	Label	Relation

General Information	Type of Compliance Note	Procedure
	Description	The Heated Floor Panel System increases the temperature of the floor in the passemger/crew door area to create and maintain a comfortable temperature to the crew and to the passengers on board for comfort reasons. A partial deactivation of the Floor Heating System will not affect a continued safe flight and landing. The aim is, if one floor heating panel in the door 1 area fails, the affected panel should be set inoperative but will remain installed to reduce maintenance cost and ground time.
	Reason for Revision	Update of the effectivity: DLH A320 A/C added to effectivity due to Phase in. EO Workpage Reporting Sheet revised.
	AAR related	No
	Mod./Repair Classification	minor
	Airworthiness Approval	LHT Developm. Eng. WE acc. LBA.JA.003
	Approval Document	CRAS 00111031/001

Effectivity	A/C Type A320		
	A/C Model	**Total**	**Registrations**
	A319-112	10	D-AIBA, D-AIBB, D-AIBC, D-AIBD, D-AIBE, D-AIBF, D-AIBG, D-AIBH, D-AIBI, D-AIBJ
	A319-114	19	D-AILA, D-AILB, D-AILC, D-AILD, D-AILE, D-AILF, D-AILH, D-AILI, D-AILK, D-AILL, D-AILM, D-AILN, D-AILP, D-AILS, D-AILT, D-AILU, D-AILW, D-AILX, D-AILY
	A320-214	55	D-AIUA, D-AIUB, D-AIUC, D-AIUD, D-AIUE, D-AIUF, D-AIUG, D-AIUH, D-AIUI, D-AIUJ, D-AIUK, D-AIUL, D-AIUM, D-AIUN, D-AIUO, D-AIUP, D-AIUQ, D-AIUR, D-AIUS, D-AIUT, D-AIUU, D-AIUV, D-AIUW, D-AIUX, D-AIUY, D-AIUZ, D-AIWA, D-AIWB, D-AIWC, D-AIWD, D-AIWE, D-AIWF, D-AIWG, D-AIWH, D-AIWI, D-AIWJ, D-AIWK, D-AIZA, D-AIZB, D-AIZC, D-AIZD, D-AIZE, D-AIZF, D-AIZG, D-AIZH, D-AIZI, D-AIZJ, D-AIZM, D-AIZN, D-AIZO, D-AIZP, D-AIZW, D-AIZX, D-AIZY, D-AIZZ
	A320-271N	10	D-AINA, D-AINB, D-AINC, D-AIND, D-AINE, D-AINF, D-AING, D-AINH, D-AINI, D-AINJ
	A321-231	38	D-AIDA, D-AIDB, D-AIDC, D-AIDD, D-AIDE, D-AIDF, D-AIDG, D-AIDH, D-AIDI, D-AIDJ, D-AIDK, D-AIDL, D-AIDM, D-AIDN, D-AIDO, D-AIDP, D-AIDQ, D-AIDT, D-AIDU, D-AIDV, D-AIDW, D-AIDX, D-AISH, D-AISI, D-AISJ, D-AISK, D-AISL, D-AISN, D-AISO, D-AISP, D-AISQ, D-AISR, D-AIST, D-AISU, D-AISV, D-AISW, D-AISX, D-AISZ
	A321-271NX	18	D-AIEA, D-AIEB, D-AIEC, D-AIED, D-AIEE, D-AIEF, D-AIEG, D-AIEH, D-AIEI, D-AIEJ, D-AIEK, D-AIEL, D-AIEM, D-AIEN, D-AIEO, D-AIEP, D-AIEQ, D-AIER

Warranty	Information	No Warranty
	Material	
	Manhours	
	Remarks	

Responsibility/ Contact Information	Role	Dept.	Name	Phone

	Dept	Name	Phone	Date	Signature
Prepared by	FRAL/OME3	Alexander Kissel	+49 69 696 93694	21-SEP-2021	This document has been automatically prepared and is valid without signature
Released by	FRAL/OME3	Alexander Kissel	+49 69 696 93694	21-SEP-2021	
Approved by	FRAL/OME3	Vincent Bouchet	+49 69 696 94640	23-SEP-2021	
Customer Approval	Customer Approval Sheet:10192377				

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

Planning Data

First Accomplishment	**Date**	none	**FH / FC / Days**	none
Repetitive Accomplishment	**Date**	none	**FH / FC / Days**	none

Event   none
Place of Incorporation   none
Additional Info   none
Accomplishment Report   to FRA L/OME321
Remarks   none
Engine Change   none

Compliance Limit

Material   **Information**
     Remarks

Technical Impact

☐ **Interchangeability affected**	none
☐ **Intermixability affected**	none
☐ **Operations / Performance**	none
☐ **Onboard loadable Software affected**	none
☐ **Spares affected**	none
☐ **Labeling after Modification**	none
☐ **Special Tools / Equipment / GSE**	none
☐ **Testflight**	none
☐ **Trainer / Simulator**	none
☐ **Double Inspection**	none
☐ **ETOPS affected**	none
☐ **Electrical Load Analysis (ELA)**	none
☐ **Facility Requirements**	none
☐ **Special Maintenance Staff Required**	none

☐ **Weight Change**   **Moment Change**   **Remark / Position**
    none   none

Affected Documents   **Doc. Type**   **Remarks**

EO List of Effective Pages

{Lufthansa logo}

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

*	**	Pages	Issue Date	*	**	Pages	Issue Date
R	E	1-1, 1-2	23.09.21				
R	L	1-LEP	23.09.21				
	S	ISD: WE22-AMM 25-27: 1	04.06.12				
R	E	Page 2 to 4	17.09.21				
	R	EO 342978 01 EB-SC 1-3	23.12.15				
	R	EO 342978 01 CRAS 1-1	23.12.15				

   *   A = Added   D = Deleted   R = Revised

   **   A = AAR   C = Check List   E = Engineering Order   L = LEP   O = Others   P = Meeting/Coordination Protocol

        R = Approval Doc.   S = OEM Source Document   W = Economical Evaluation   B = LHT Source Document

*	**	Drawings	Issue Date	*	**	Drawings	Issue Date

Engineering Order

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

Description

Heated Floor Panel System

The new A320Fam airplanes are equipped with four Heated Floor Panels in Passenger/Crew Door #1. The heated floor panels increase the temperature in these areas of the cabin which are much colder than other areas. The heated floor panel system has:

- an inner and an outer heated floor panel LH, FIN's 31DS and 33DS
- an inner and an outer heated floor panel RH, FIN's 30DS and 32DS
- two Control Units, FIN's 60DS and 66DS .

Heated Floor Panels, FIN's 31DS; 33DS; 30DS and 32DS

The heated floor panel is made of composite material. It has heating elements to heat the surface of the panel. The heated panels are equipped with a sensor, to measure the temperature of the heating foil: One over temperature thermostat and one self-locking over temperature thermostat.
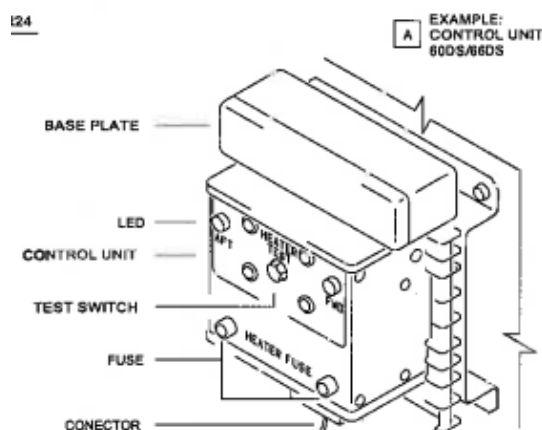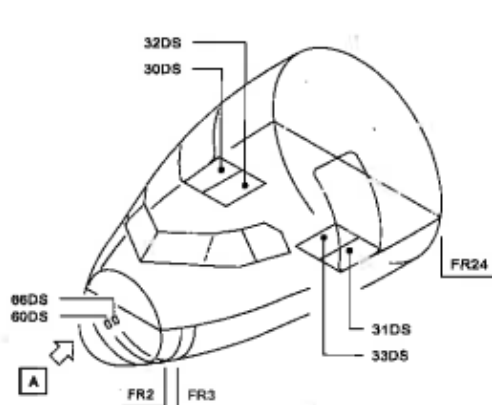
Operation

If a control unit has a malfunction and supplies constant power to a heated floor panel, the over temperature thermostat operates. The over temperature thermostat operates at approximately 35° C and 65° C. If the heated floor panel temperature increases more than 80° C the self-locking over temperature thermostat will stop the power supply to the heated floor panel.

Control Units, FIN's 60DS and 66DS

The control unit FIN 60DS controls and monitors the heated floor panels FIN 31DS and 33DS and the other unit FIN 66DS controls and monitors the heated floor panels FIN 30DS and 32DS. When you push the pushbutton, you start a Bite test of the control unit. The indicator comes on when the Bite test is satisfactory. The circuit breakers and the fuses protect the power supply to the heated floor panels.

If an control unit detects a fault, the control unit removes the power supply from the heated floor panels. The circuit breakers disconnect both Heated Floor Panels per side.

Date of Issue	17.09.2021		Page

Engineering Order

Lufthansa

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

Action - Deactivation of one Heated Floor Panel per side

General

The Heated Floor Panel System increases the temperature of the floor in the passenger/ crew door area to create and maintain a comfortable temperature to the crew and to the passengers on board for comfort reasons.

This new procedure introduces the possibility:

- to operate with a failed panel under the activation the second panel on the same side,
- to operate with one heated floor panel per side about a long period
- to perform the replacement of the damaged heating panel in the next C-Check.

A partial deactivation of the Floor Heating System will not affect a continued safe flight and landing. The Heated Floor Panel operation is not covered by the Minimum Equipment List (MEL). Non-safety related equipment such as galley equipment and passenger convenience items need not be listed.

Action

The CRAS 00111031 / 001 and the Engineering Bulletin Simplified EB-SC-No 00111031 / 001 include all maintenance and Trouble Shooting steps for the deactivation of one Heated Floor Panel per side. Please perform all action items and write down the result in the Reporting Sheet.
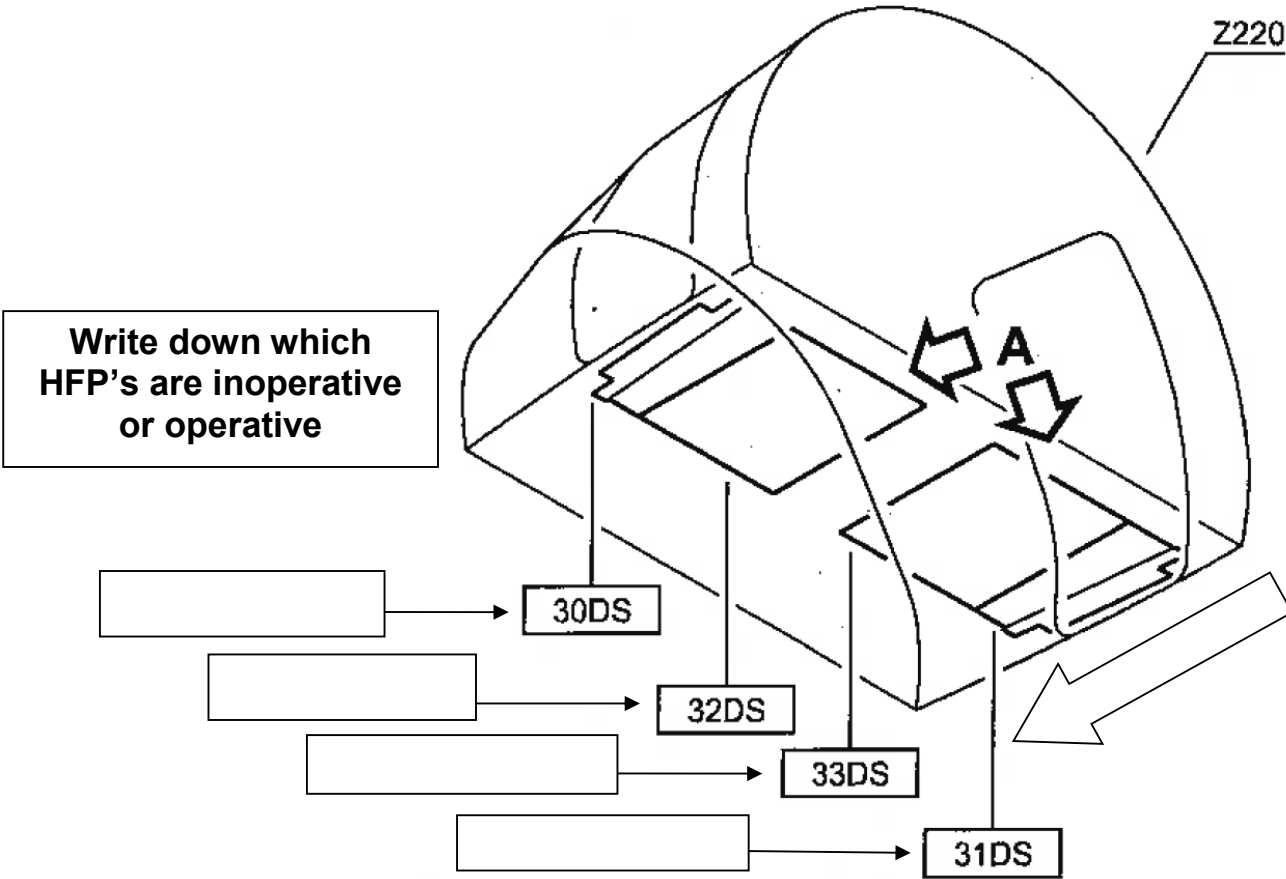
Engineering Order

<div style="float:right">⟲ **Lufthansa**</div>

DEUTSCHE LUFTHANSA AG

Customer	Order	Product	Contractor	EO-Class	EO-Type	EO-Number	Issue	ATA
DLH	IAS 3	W	WF	Aircraft	Modification	342978	04	25

Reporting Sheet   (EO-PRO 342978)

Station	Date	Aircraft		
		Registration	Flight Hours	Flight Cycles

Write down which HFP's are inoperative or operative

Deferred Item Number (ZB):	
Remarks:	

Fill out the Reporting Sheet and send it to: Deutsche Lufthansa AG | FRA L/OME321 | Email: a320ata21_36@dlh.de

Engineering Bulletin Simplified
Aircraft/Engine Change (EB-SC)

Lufthansa Technik
Design Organisation

EB-SC-No. 00111031/001

Title
Deactivation Procedure for Door 1 Area Floor Panel Heating

Product / (A/C type or Engine type)	ATA	OEM-Reference (e.g. SB, AMM ,EM ,CMM, IPC)
A319,A320,A321 / A320Fam	25-27-00	AMM 25-27-00

Part Denomination	PNR	SNR	Part Manufacturer
Floor Panel, Heated	4E4141-x 4E4941-x4E4140-x		BF GOODRICH DE-ICING SYSTEMS

Restriction

MSN/ESN	Tailsigns	Operator/Customer DLH

Aircraft/Engine Status

Hours	Cycles	Date

Reason for Revision

Brief Description of Change

Part of Change which is covered by already approved Data (Manufacturer Approval / Manual)
Replacement of heated floor panel, BITE test of heated floor panel control unit performed acc. AMM.
Part of Change for which LHT-DO takes the responsibility and provides the showing of compliance
Procedure to deactivate 1 defect heated floor panel per door 1 side instead of replacing the floor panel.

Affected Documents and Data (e.g. AMM, EM, CMM, IPC, WBM, WDM/AWM, ELA, SPM, PMT)
AMM, EO-O

Weight & Balance Information

Weight Change :   0 kg   Position :   0 m (Balance Arm)

Remarks
The deactivation shall be limited until next C-check or until the second heated floor panel of one door side becomes defect.

Responsible for Design

Name / Dept. / Date / Signature

In the original version digitally signed by
Schlichtkrull, Klaus 17.08.2012 09:26
Signature checked
17.08.2012 12:29   ✓

Responsible for Verification

Name / Dept. / Date / Signature

In the original version digitally signed by
Lambert, Bernd 17.08.2012 10:52
Signature checked
17.08.2012 12:29   ✓

Any use of this information being proprietary to Lufthansa Technik AG is prohibited unless approved in writing.

[X] The technical content of this document represents a minor change to type design and is approved under the authority of **EASA Design Organization Approval No. EASA.21J.019** and accepted as approved data by the **FAA per Order 8100.14A Change 2**

[ ] Major and / or other authority approval Reference

Document Date 17.08.2012 09:24
Page 1 of 3

Engineering Bulletin Simplified
Aircraft/Engine Change (EB-SC)

Lufthansa Technik
Design Organisation

EB-SC-No. 00111031/001

Accomplishment Instructions

1. Preparation / Material

Deactivation Procedure for Door 1 Area Floor Panel Heating on DLH A320Fam Aircraft

Background:
The Heated Floor Panel System increases the temperature of the floor in the passenger/ crew door area to create and maintain a comfortable temperature to the crew and to the passengers on board for comfort reasons. A partial deactivation of the Floor Heating System will not affect a continued safe flight and landing.

Aim:
If one floor heating panel in the door 1 area fails, the affected panel should be set inoperative but will remain installed to reduce maintenance cost and ground time. Therefore, a new de-activation procedure has to be performed.

Description:
Floor panel heating system failure in the FWD Door Area (AMM 25-27-00, 25-27-34, 25-27-51 Ancillary Equipment –Heated Floor Panel System-FWD Door Area):

Scenario: One heated floor panel is INOP.

Conditions:
- Deactivation procedure is limited to one heated floor panel being INOP per door 1 side (LH or RH.)
- The affected heated floor panel shall not be de-installed from the aircraft neither during the test procedure nor after detection of the reason of malfunction.
- The faulty Floor Panel Heated shall be locked against switching on again described in this procedure.
- Open a deferred item and transfer complaint to HIL.

This procedure is only valid for heated floor panel installed in door 1 area on DLH A320Fam A/C.

Note: If a second Heated Floor Panel is inoperative per door side, please replace both damaged Heated Floor Panels within 40 days.

2. Accomplishment

Procedure for deactivation of Floor Heated Panel (FHP), different to AMM

A. After verification that only the floor heated panel is INOP, this FHP can be deactivated as described in B)

Make sure that:

- The aircraft wiring has no short to ground
- The Control Unit FIN 60DS respectively 66DS is serviceable
- The mechanical Floor Panel Heated condition is normal:
  - is not soft

Any use of this information being proprietary to Lufthansa Technik AG is prohibited unless approved in writing.

X The technical content of this document represents a minor change to type design and is approved under the authority of **EASA Design Organization Approval No. EASA.21J.019** and accepted as approved data by the **FAA per Order 8100.14A Change 2**

☐ Major and / or other authority approval Reference

LHT Form 32455A-11 (HAM TT/L) Printed in the Federal Republic of Germany

Engineering Bulletin Simplified
Aircraft/Engine Change (EB-SC)

⊜ **Lufthansa Technik**
Design Organisation

EB-SC-No. 00111031/001

- o   no burn marks exist on the NTF and on the back side of the panel
- o   no other damages are identifiable

B.   Deactivate the related inoperative Heated Floor Panel:

- Remove the related fuse of the control unit
  - o   FPH 30DS (RH- A) / CU 66DS - HTR 1
  - o   FPH 31DS (LH- A) / CU 60DS - HTR 1
  - o   FPH 32DS (RH- B) / CU 66DS – HTR 2
  - o   FPH 33DS (LH- B) / CU 60DS – HTR 2

- discard the fuse

Note: Please, perform a material entry of the fuse P/N in the deferred item. Refer to   IPC 25-27-34 for correct P/N.

- fix the fuse holder cap of INOP system with appropriate tape, as required
- Install a grey INOP-label between the INOP LED-light/cap-fuse on respective Control Unit

C.   Perform a C/U Bite Test according to AMM Task 25-27-00-740-001-A

- o   On the related Control Unit the indicators come on, when the BITE test is satisfactory and stays off for the de-activated heated floor panel

D.   Close Up

- Put all CB and switches to the initial configuration
- Make sure that the work area is clean and clear of tools and other items
- Close the avionics compartment door 811
- De-energize the aircraft electrical circuits
-
E.   Open a deferred minor item ATA 25-27 for the replacement of the damaged floor heated panel for the next C-Check.

Note: If a second Heated Floor Panel is inoperative per door side, please replace both damaged Heated Floor Panels in the next 40 days.

3. Adjustment / Tests

n.a.

Document Date 17.08.2012 09:24

LHT Form 32455A-11 (HAM TT/L) Printed in the Federal Republic of Germany

Change/Repair Approval Sheet ⬡ Lufthansa Technik
Design Organisation

Project No. 00111031 / 001
Minor change approval

Title
Deactivation Procedure for Door 1 Area Floor Panel Heating

Document Type	No.	Issue/Rev-No.	Date
EBS	00111031	001	17.08.2012

Product: Transport category airplane
Type / Model: A319,A320,A321 / A320Fam
Type Certificate Data Sheet Doc.: not applicable, latest regulations used
Compliance Record List: not applicable
Post STC Change ☐ **STC-No.**

Approval time limited until:
Additional maintenance or operational advice :
  ☐ provided in Design Document(s)
  ☐ not applicable

Restrictions / Conditions / Notes
Only 1 heated floor panel per side may be set inop with this procedure.

The design data contained in the referred document(s) represent a minor change to the type design or a minor repair and is approved under the authority of EASA Design Organization Approval No. EASA.21J.019

Other authority approval reference(s)

Office of Airworthiness

In the original version digitally signed by
Marbach, Markus 17.08.2012 11:59
Signature checked
17.08.2012 12:27
✓

☒ **If this EASA or other referenced approval is not valid or accepted in the state of registry of the airplane it is to the operator to obtain an additional approval by his Airworthiness Authority.**

Document Date 17.08.2012 09:24
Page 1 of 1