

H⁴Aerospace

MODIFICATION SUMMARY SHEET AND DECLARATION OF COMPLIANCE

Mod. No. MOD H4A1303	Modification Class MAJOR MINOR		STC Category N/A	Significant Change Yes No		Sheet 1 of 7	
Issue	1	2	3	4	5	6	7
Date	21/04/10	23/08/10	04/10/10	21/10/10			
Compiled	A. Hayward	A. Hayward	A. Hayward	A. Hayward			
Aircraft Type: B737-700IGW		Registration No.: A6-DFR		Constructors Serial No.: MSN30884		C of A Categories: Public Transport	
Customer/Operator: L3-Communications				Installer: Presidential Flight			
Title: Interior Reconfiguration to 22 Passenger Configuration on Boeing 737-700 Aircraft							
Introduction: This modification is raised to reconfigure the interior passenger cabin from a 18 passenger capacity to a 22 passenger capacity on a Boeing 737-700IGW aircraft A6-DFR.							
Exceptions: None							
This modification affects: (delete as appropriate)							
Maintenance Manual		Overhaul Manual		Flight Manual		Wiring Manual	
Parts Catalogue		Crew Manual		MEL/MMEL		Other: Mod Record Log. Weight & Balance	
CVE Checked Airframe/Interior Content: Signed:  Name: N. Knox.		CVE Checked Avionic/Electrical Content: Signed:  Name: R. EMMAN		CVE Checked Stress Content: Signed:  Name: C. SPADING			
<p>APPROVAL</p> <p>I hereby declare that this design change complies with the airworthiness and environmental protection requirements applicable to the subject aircraft or component and has no unsafe features.</p> <p>The Technical Content of this Document and supporting reports and drawings listed herein are Approved under the Authority of DOA Nr EASA.21J.087</p> <p>Signed:  Name: G. TAYLOR Date: 26 OCT 10 For H4 Aerospace</p>							

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AMENDMENT RECORD LIST

Amendment List		Details of Change
Issue Number	Issue Date	
1	21/04/10	First Issue
2	23/08/10	Description of original Seating Capacity altered from 19 passengers to 18 passengers on sheet 1 and 3. Total number of persons on board clarified as 29.
3	04/10/10	Description altered to clarify that H4 Aerospace take full EASA certification responsibility for the L-3 Communication FAA STC work package. Certification basis revised to reflect exceptions for 25.562 and 25.853. H4ACCL449 raised to issue 2, H4ACP062 raised to issue 6, H4ADR528 raised to issue 2.
4	21/10/10	H4ACCL449 raised to issue 3, H4ADR563 raised to issue 2 following EASA comments.
5		
6		
7		

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a) Introduction:

This modification is raised to reconfigure the interior passenger cabin from an 18 passenger capacity to a 22 passenger capacity on a Boeing 737-700IGW aircraft A6-DFR.

b) Description:

The subject aircraft was originally configured by Lufthansa Technik as an 18 seat configuration. This modification is raised to remove the existing Dining/Conference area between STA 565 and STA727A. This removed the dining table and 6 chairs certified for take-off and landing and replaced them with the following items:-

- One Aft facing three seat divan which was not certified for Take-off and Landing.
- One L-shaped divan with three side facing seats and two forward facing seats. All five seats are certified for take-off and landing.
- One side facing divan with two seats. Both seats are certified for take-off and landing.
- Two manually operated Hi-Lo coffee tables, located one in front of each side facing divan,
- Two divan cabinets
- Floor covering
- Ceiling Panels
- Floor structure rework to install additional seat tracks

Communications equipment, lighting, oxygen drops, and safety equipment were relocated within the same area to accommodate the new seating arrangements.

Additionally placards were installed to identify the approved seating positions for taxi, take off and landing. This modification provides certification data for approval of the TSO-C39c approved 3 seat divan (which is made up of 3 B/E Aerospace single divans installed by L-3) for taxi, take off and landing, increasing the allowable passenger count by 4, taking the total passengers up to 22 and removed the existing L-3 Communications certified placards "Not for Taxi, Take-off and Landing" installed on this aft facing 9G divan and replaced them with Fasten seat belt instruction placards.

This modification reviews and certifies the L-3 Communication FAA STC ST9766SC-D data together with certifying the approved 9G Divan and installation, seat belts/harnesses, headstrike criteria, review of emergency equipment for the passengers on board to allow for the increase in total passengers to 22 (Giving a total limit of 29 persons on board) and the effect the increase has on the remaining interior and equipment standard.

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The following modifications were made in addition to the Lufthansa Technik changes:-
 - Oven Replacement
 - Dual Language Exit Signs Installation

c) Weight

The weight and balance of the aircraft is affected. See weight and balance report H4AWB373.

Note: The addition of the maximum passenger load of 22 persons and the maximum cargo load of 2,100.1 kg (4,630.0 lb) (See Lufthansa Technik AG Document, "Supplement (Revision 1) to Boeing Weight and Balance Control and Loading Manual D043A570-BNJ1) Weight (ZFW) of 50,694.6 kg (111,762.5 lb) at a balance arm of 650.4 in. (15.0 % MAC). Adding the maximum fuel loading allowance (including aux fuel) of 28,581.0 kg (63,010.4 lb) at a density of 0.8029 kg/l results in a maximum taxi weight of 79,275.6 kg (174,772.9 lb) at a balance arm of 657.0 in. (19.2 % MAC). However, the maximum taxi weight is well above the Maximum Design Taxi Weight of 77,791 kg (171,500.0 lb) between 18.5% and 24.5% MAC (See Boeing Weight and Balance Manual D043A570-PFR1, "Boeing 737-700 IGW Weight). This example loading is outside of the certified flight limits for the aircraft. As a result, the load out of the aircraft must be carefully scrutinized on an operational basis to ensure that the combined effects of cargo, galley and cabin stowage, passenger load, and fuel load result in acceptable weight and balance conditions for a given operational scenario.

d) Certification Basis

The applicable requirements are those that are defined in EASA Type Certificate Data Sheet No.A.120 Issue 2, referring to JAA airworthiness requirements. (Applicable JAR Requirements at the Reference Date: JAR 25 Change 13, effective 5 October 1989 and associated CRI's and reversions). H4 Aerospace has opted to comply with the latest JAR requirements, where possible, at Amendment 20. This amendment states EASA CS 25 at Amendment 4 as the certification basis. The following amendment has been taken as the latest applicable: CS 25 Amendment 4 with the exception of CS25.562 as detailed in CRI A.11-04 and CS25.853(d) as detailed in CRI D-01.

The following Certification Review Items (CRI) have been considered for this modification.

CRI D-01 Heat Release Rate and Smoke Density
 CRI A.11-04 Emergency Landing Dynamic Loads
 CRI H-01 ICA on EWIS

The following Temporary Guidance material has been considered for this modification.
 None.

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e) Compliance with Requirements

This modification complies with all applicable requirements; refer to H4 Aerospace Compliance Checklist H4ACCL449 for details.

f) Approval

The Technical content of this document, supporting reports and drawings listed herein is approved under the authority of EASA.21J.087.

g) Flight Manual

The Flight Manual is affected. A flight manual supplement has been produced, see H4AFMS020.

h) Maintenance Manual and Documents

The following documents are affected by this modification:-

- 1) Illustrated Parts Catalogue.
- 2) Aircraft Modification Record Book
- 3) Crew Manual
- 4) Weight and Balance Manual
- 5) Maintenance Manual
- 6) Wiring Diagram Manual
- 7) The Maintenance Schedule

These are to be amended following embodiment of this modification. Instructions for Continued Airworthiness are provided in H4ADR528.

The following manuals are not affected by the introduction of this modification:-

- 1) Minimum Equipment List (or MMEL)

i) Electrical Load

The replacement of the galley ovens reduces the overall load on Galley Feeder A.

Oven 1 (C101) now requires 2KVA resulting in a reduction of 1.9KVA across all flight phases.
Oven 2 (C103) now requires 2KVA resulting in a reduction of 1.9KVA across all flight phases.

The overall Galley Feeder A AC load totals will now be 11.490KVA across all flight phases, which is a reduction

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of 3.8KVA.

This information is drawn from L-3 Communications document 33669-949500 ECO W000369.

j) Flight Test

No flight test is required.

k) Environmental Conditions

The Noise certificate and Emissions are not affected by the introduction of this modification.

l) Limitations

None

m) Continued Airworthiness

Additional instructions for continued airworthiness are introduced by this modification see H4ADR528
H4 Aerospace is responsible for the continued airworthiness of this modification. In the event of a problem with the modification installation H4 Aerospace are to be notified immediately at the contact address below.

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n) Drawings Introduced

737ME25200338 Issue A Cabin Layout Drawing
 33669-500000 Rev - L-3 Communications Placard Drawing
 33669-560006 Rev - L-3 Communications Placard Drawing
 33669-949500 ECO W000369 L-3 Communications Electrical Load Drawing

o) Documents Introduced

H4AAI1415 Issue 1 Accomplishment Instructions
 H4AFMS020 Issue IR Flight Manual Supplement
 H4ADR528 Issue 2 Instructions for Continued Airworthiness
 H4AWB373 Issue 2 Weight and Balance Report

The following documents are proprietary and are required for certification only

737ME25200343 Issue A Cabin Attendant Direct View Drawing
 H4ACCL449 Issue 3 Compliance Check List
 H4ACP062 Issue 6 Certification Plan
 H4ADR532 Issue 1 Evacuation Analysis
 H4ADR541 Issue 2 Cabin Interior Walkthrough Report
 H4ADR542 Issue 1 Oxygen Reachability Analysis
 H4ADR546 Issue 1 System Safety Assessment Report
 H4ADR556 Issue 1 Decompression Statement
 H4ADR558 Issue 1 L-3 Communications Master Document List
 H4ADR563 Issue 2 Enhanced Zonal Analysis Procedure
 H4ADR564 Issue 1 Oxygen Statement
 H4ASR132 Issue 1 Structural Analysis Report
 H4ASR133 Issue 1 Corner Credenza Structural Substantiation Report
 H4ATR146 Issue 1 Electrical Power, Bonding, Ground and EMC Test Report
 H4ATR147 Issue 1 Divan and Credenza Static Test Report
 H4ATR148 Issue 1 Flammability Test Report

p) Associated Documents

ECO W000581 Rev C L-3 Communications Engineering Change Order
 ECO W000573 Rev A L-3 Communications Engineering Change Order
 ECO W000896 Rev F L-3 Communications Engineering Change Order
 ECO W000897 Rev B L-3 Communications Engineering Change Order
 DAS P-09-001 Rev A L-3 Communications FAA STC Project for Interior Upgrades