









	FUNCTIONAL TEST	PFBFA-26-00-01-00/2	Issue	F	Pages.	14
	SPF, Aircraft System Engineering Department					
Aircraft	A330 MRTT					
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FIRE PROTECTION SYSTEM TEST						
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Date: 03/03/11		Date: 03/03/11		Date: 09/03/11		

REVISIONS RECORD

Issue	Revision Reason	Approved
Date	Chapters, Sections, Affected Pages	Signature
A	New Issue	Antonio Corrales Dominguez
04/03/10	All pages	
B	FCRC	Antonio Corrales Dominguez
20/7/10	Page 10,11	
C	6.6 AES SYSTEM TEST added, due to NT-FU-SGC-10004 requirements	Antonio Corrales Dominguez
03/03/2011	Pages 11 & 12	
D	6.6 and 6.7 modified according to the definite NT-FU-SGC-10004 applicable to RSAF.	Antonio Corrales Dominguez
09/03/2011	Pages 7-9	
E	6.6 modified according to the ME-FE-NT-100032A. 6.2 SDCU Test added	Antonio Corrales Dominguez
29/03/2011	Pages 7, 9, 10	
F	Title modifies, 5.2 section modified, 6.1.2 AMM Task added, 6.3.2 section added, 6.6 section added, 6.8.2 section modified.	Jesus Villasante San Roman
28/11/2011	Pages 1, 5, 6, 7, 9, 11	

1 INTRODUCTION

1.1 Object

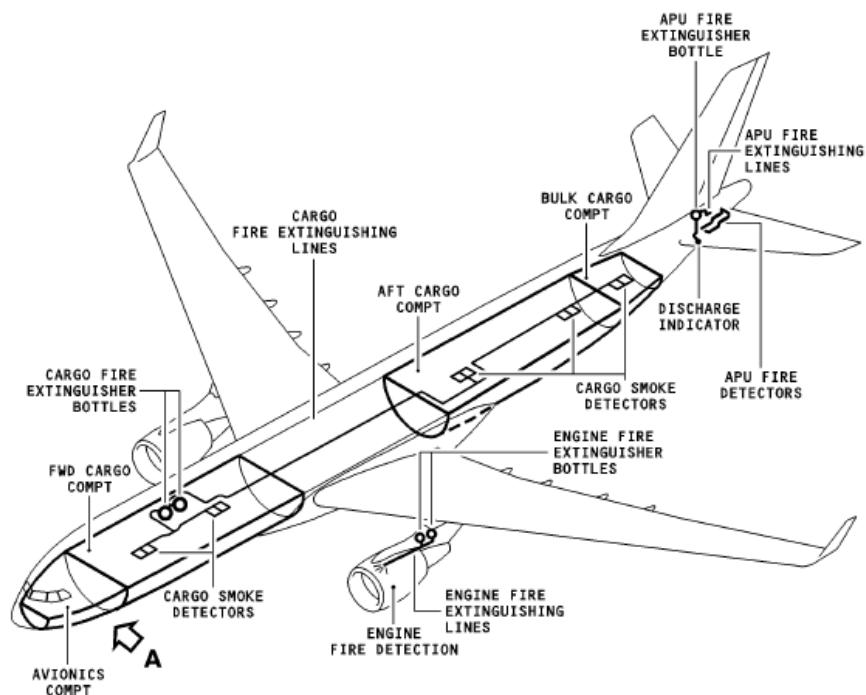
This document outlines the functional tests to be carried out on the A330 MRTT fire protection system due to modifications.

1.2 List of acronyms and abbreviations

AAR	Air to Air Refuelling
MRTT	Multi-Role Tanker Transport

2 APPLICABLE DOCUMENTATION

NT-FA-SGC-07027	FUNCTIONAL TESTS PROTECTION SYSTEM
AMM	Aircraft Maintenance - Manual Royal Australian Air Force
NT-FA-AE0-05112	A330-200 MRTT RAAF Life Support Equipment List (ENG-680-LSEL)
NT-FU-SGC-10004	FSTA Ground Test requirements ATA 26
ME-FS-NT-100004	RSAF Ground Test Requirements ATA26
ME-FE-NT-100032A	UAE Ground Test Requirements ATA26



3 REQUIRED EQUIPMENT

The following equipment is required for the tests outlined in this document:

Table 1: Tanks Leakage Test Equipment

Test Equipment	Test Equipment Requirements
Weighing scales	10 kg (22 lb), accuracy 0.001 kg (0.0022 lb)
Access Platform	5 meters
Safety clips for C/B	

4 DEFINITIONS

N/A.

5 PRELIMINARY INSTRUCTIONS

5.1 Safety Instructions

- All relevant Work Standing Orders concerning safety must be complied with.
- Any item of test equipment that is connected to the tank wiring shall be intrinsically safe, i.e. it shall comply with European standard EN 50.020, "Electrical apparatus for potentially explosive atmospheres".
- The aircraft and test equipment must be properly bonded.

5.2 Preliminary tests performed

This test has to be performed successfully before doing PFBFA-26-00-01-00/2:

- PFBFA-21-00-04-00/1 ECS New fans Functional Tests
or
- PFBFA-21-00-04-02/2 ECS New fans Functional Tests
As applicable.

6 TEST EXECUTION

The following **test conditions** will apply unless otherwise stated:

Ambient temperature: -15°C to 40°C
Aircraft attitude: Pitch: 0° approximately
 Roll: 0° approximately

6.1 FIRE EXTINGUISHER WEIGHT CHECKS

6.1.1 Test preparation

Energize the ground service network (Ref. AMM subtask 24-42-00-861-801).

6.1.2 Test execution

Perform TASK 26-24-00-280-801-A

- Weight Check of the Portable Fire-Extinguisher Bottles and a Visual Check to Confirm that the Bottles are not Discharged

PASS ☐ **FAIL** ☐ **COMMENT:**

NOTE: The procedure shall be applied to all fire extinguishers on the aircraft, including the one located in the crew rest compartment.

NOTE: Refer to the Part Number (P/N) for the related weight limits as given in the table:

Part Number	Weight Limits (initial charged weight)
H1-10AIR (type H1-10)	-20.0 g +20.0 g (-0.70 oz +0.70 oz)
74-00 74-20	-2% +2% each year, to a maximum of 10%
BA21741SR-2 BA51015-3 BA51015R-3	-10.0 g +10.0 g (-0.35 oz +0.35 oz)
898052 (model XL2.5HZ)	-57.0 g (-2.01 oz)
892480 100-9750 (model HAL-035-AVH)	-0.0 g +0.0 g (-0.0 oz +0.0 oz)

6.2 SDCU TEST

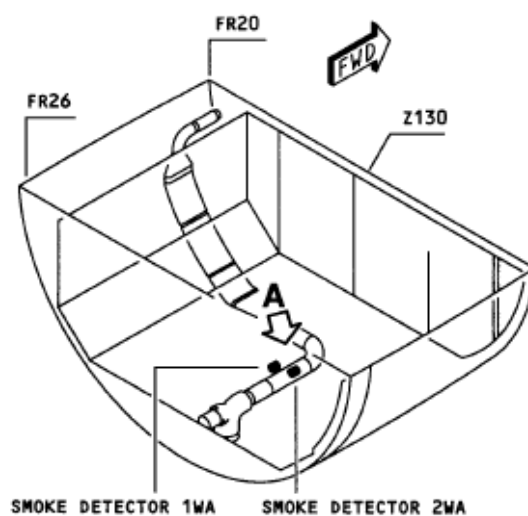
6.2.1 Test execution

Perform TASK 26-16-00-740-801

- Bite Test of the Smoke Detection System through the MCDU

PASS ☐ FAIL ☐ COMMENT:

6.3 AVIONICS BAY



6.3.1 Test execution

Perform TASK 26-15-00-710-802

- Operational Test of the Avionics Compartment Smoke-Detection through the MCDU

PASS ☐ FAIL ☐ COMMENT:

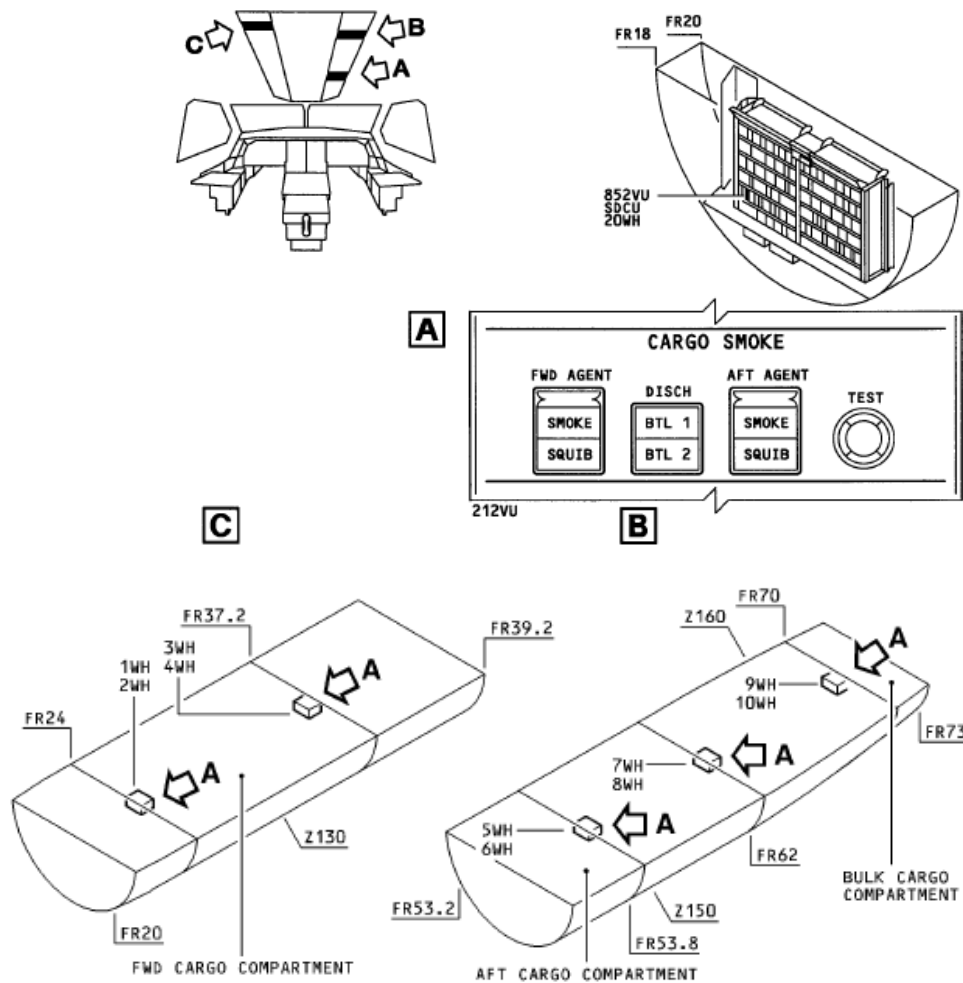
6.3.2 Test execution

Perform TASK 26-15-00-710-801-A

- Operational Test of the Avionics Compartment Smoke-Detection by Push To Test

PASS ☐ FAIL ☐ COMMENT:

6.4 FORWARD & AFT CARGO



6.4.1 Test execution

Perform TASK 26-16-00-710-803

- Operational Check of Cargo Compartment Smoke Detection by PTT

PASS ☐ FAIL ☐ COMMENT:

6.5 LAVATORY

6.5.1 Test execution

Perform TASK 26-17-00-710-802

- Operational Check of the Lavatory Smoke Detection System by MCDU

PASS ☐ FAIL ☐ COMMENT:

6.6 VCC Smoke Detector Test (Applicable for Aircrafts with VCC)

6.6.1 Test execution

Perform TASK 26-18-00-710-811-A

- Operational Check of Video Control Center (VCC) Smoke Detection through the Multipurpose Control & Display Unit (MCDU)

PASS ☐ FAIL ☐ COMMENT:

6.7 FCRC (Applicable for Aircrafts with Crew Rest Compartment)

6.7.1 Test execution

- Check the next CBs are closed:

FIN	DESIGNATION	LABEL	COORDINATES
A2NW	CRC C.B.	FLIGHT CREW REST COMPARTMENT EMER LIGHTS	B20

- Ensure that CIDS is operative.
 - Check on E/WD inoperative systems page, CIDS not appear.

- Ensure that LEAVE COMPARTMENT light is switched ON.

PASS ☐ FAIL ☐ COMMENT:

- Perform TASK 32-69-00-860-801 (on LGCIU 1)
 - Simulation of Flight, When the Aircraft is on the Ground: Simulate Uplock on Left MLG.

- Ensure that LEAVE COMPARTMENT light is switched OFF.

PASS ☐ FAIL ☐ COMMENT:

- Perform TASK 32-00-00-860-805
 - Ground Configuration after Flight Configuration: Stop simulating Uplock on Left MLG.

- On the MCDU console:
 - Access to CMS
 - ATA26 flap
 - SMOKE WARNING flap
 On second page (2/2)
 - SMK LOOP FCRC TEST flap
 - TEST IN PROGRESS (200 seg)

In this test you have to check the next following points:

- Check that E/WD appear SMOKE FLT REST SMOKE
- Glare shield MASTER WARNING both sides flashing
- In CRC compartment, LEAVE COMPARTMENT light shall be in flashing mode
- In CRC compartment, audible smoke warning shall be ear.
- In Flight Attendants Panel, SMOKE FCRC illuminates red shall be appear

PASS ☐ FAIL ☐ COMMENT:

6.8 AES SYSTEM TEST (Applicable for Aircrafts with AES system)

6.8.1 AES Installation Test

REQUIREMENT/FUNCTION	TEST DESCRIPTION	TEST RESULTS
The Correlation of Smoke Detector Address to Installation Location shall be verified	1. Pull connectors 9WB-A and 10WB-A in Avionics Compartment	After approx. 60 seconds <ul style="list-style-type: none"> On the Engine/Warning Display (EWD): AES BAY DET FAULT comes on.
	2. Push connectors 9WB-A and 10WB-A in Avionics Compartment	After approx. 60 seconds <ul style="list-style-type: none"> On the Engine/Warning Display (EWD): AES BAY DET FAULT goes off.
	3. Reset SDCU	

PASS ☐ FAIL ☐ COMMENT:

6.8.2 AES Functional Test

TEST DESCRIPTION	TEST RESULTS	Pass /Fail	Comment
1. On the MCDU: Push the line key adjacent to the SMOKE> indication.	The SDCU page comes into view.		
2. On the MCDU: Push the line key adjacent to the SMOKE WARN TESTS> indication	The SDCU 1/2 SMOKE WARNING TESTS page comes into view.		
3. On the MCDU: Push the down-arrow key until the SDCU 2/2 SMOKE WARNING TESTS page comes into view.	The SDCU 2/2 SMOKE WARNING TESTS page comes into view.		
4. Push the line key adjacent to the <SMK LOOPS IFEC TEST indication.	<p>The message TEST IN PROGRESS (xS) shows.</p> <p>After approximately 10 seconds.</p> <p>On the glare shield panels 411VU and 412VU:</p> <ul style="list-style-type: none"> The MASTER WARN lights flash You hear the Continuous Repetitive Chime (CRC). 		

	<p>On the Engine/Warning Display (EWD):</p> <ul style="list-style-type: none"> The message AES SMOKE (red) shows. <p>On the cockpit overhead panel 272VU:</p> <ul style="list-style-type: none"> The legend SMOKE on the AES switch comes on. <p>On the MCDU:</p> <ul style="list-style-type: none"> The message ON OVHD PANEL AND ECAM WARNING DISPLAY MAKE SURE THAT (AES SMOKE) IS INDICATED shows. 		
5. On OHP 272VU press out AES P/B	<ul style="list-style-type: none"> ON OHP 272VU AES P/B shall illuminate OFF 		
6. Power off CMC1: <ul style="list-style-type: none"> FIN 3TM1 - N72 FIN 4TM1 – U7 7. Power off CMC2: <ul style="list-style-type: none"> FIN 3TM2 – D45 FIN 4TM2 – W40 	<p>On the Engine/Warning Display (EWD):</p> <ul style="list-style-type: none"> The message AES OFF (blue) disappear <p>On the MFD WCA page:</p> <ul style="list-style-type: none"> The AES OFF is shown 		
8. Power on CMC1: <ul style="list-style-type: none"> FIN 3TM1 - N72 FIN 4TM1 – U7 9. Power on CMC2: <ul style="list-style-type: none"> FIN 3TM2 – D45 FIN 4TM2 – W40 			
10. On the MCDU: Push the line key adjacent to the YES indication.	<p>On the MCDU:</p> <ul style="list-style-type: none"> ON OVHD PANEL AND ECAM WARNING DISPLAY MAKE SURE THAT (AES SMOKE) GOES OUT OF VIEW shows. 		
11. On the MCDU: Push the line key adjacent to the YES indication.	The indication TEST OK shows		
12. On OHP 272VU press in AES P/B	<ul style="list-style-type: none"> ON OHP 272VU AES P/B shall not illuminate OFF On MFCD warning page check that AES OFF does not show 		
13. Do a reset of the FWC TASK 31-50-00-710-801).	See AMM		

7 TEST RESULTS

Type on the following tables the results of the tests:

7.1 FUNCTIONAL TESTS FIRE PROTECTION SYSTEM

FIRE PROTECTION SYSTEM				
		STEP RESULT (TICK BOX)		
STEP	TITLE	PASS	FAIL	COMMENT (IF FAIL)
6.1	FIRE EXTINGUISHER WEIGHT CHECKS			
6.2	SDCU TEST			
6.3	AVIONICS BAY			
6.4	FORWARD & AFTER CARGO			
6.5	LAVATORY			
6.6	VCC SMOKE DETECTOR TEST			
6.7	FCRC			
6.8.1	AES Installation Test			
6.8.2	AES Funcional Test			

The test equipment used has to be logged on the next table.

Equipment	Manufacturer	Model	Tool identification	Calibration date	Next calibration date

Table 2. List of test equipment used

IMPORTANT NOTE: Any comments or remarks arisen during test execution shall be written down here and send to Engineering Department. Non-conformities shall be processed according to MP-22501

NOTE: In Case of NCS, write down its number on Table 3

N.C.S. Number	Date

Table 3

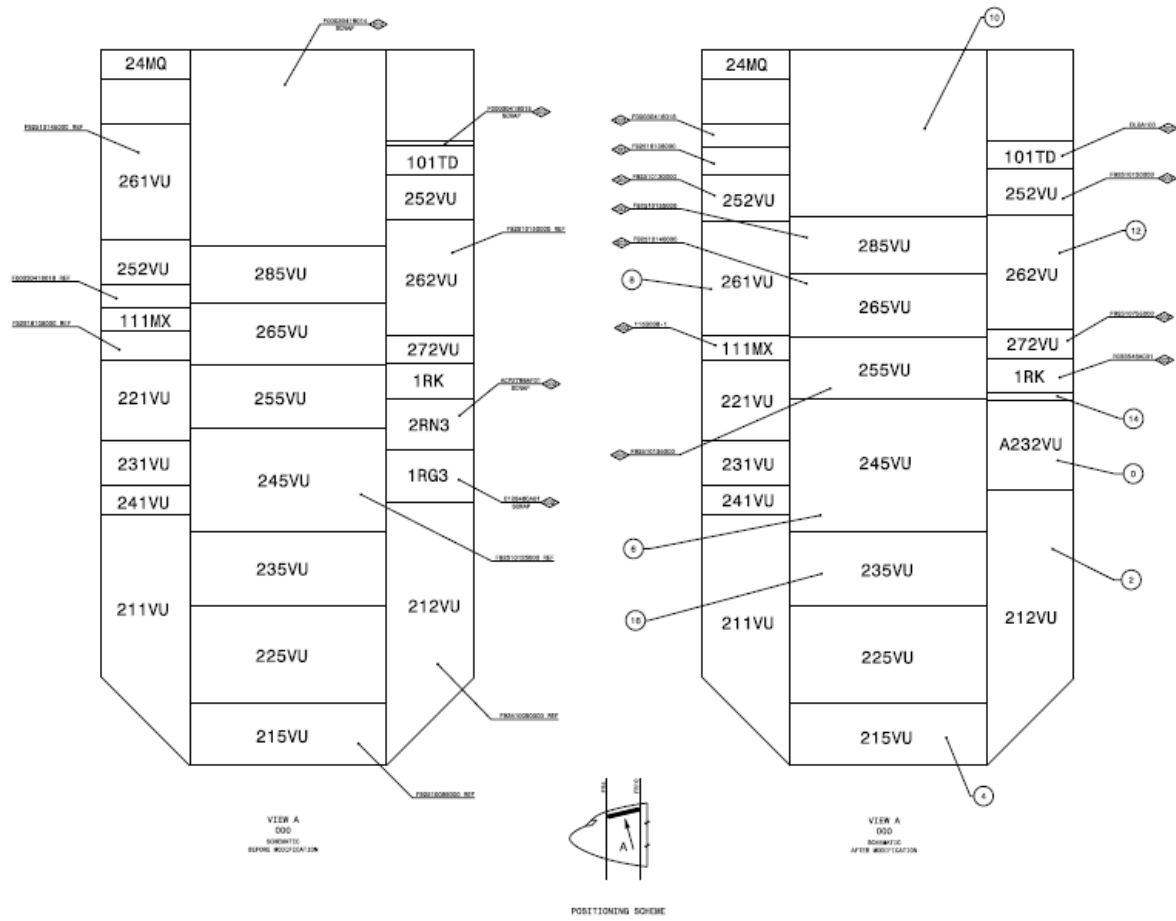
NOTE: After this functional test execution, stamp the correspondent operation on the Production Order.

NOTE: Every result sheet must be stamped and attached to Production Order.

STAMP:	
DATE:	

8 ANNEX

8.1 Figures



PAG.12

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NT-FA-AE0-05112

2.2 Location Diagram

