



MINOR CHANGE APPROVAL

10040147

This Minor Change Approval is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EC) No. 1702/2003 to

AVIONIC-SERVICE LUFTFAHRTELEKTRONIK GmbH

RICHTHOFENWEG 13
49088 OSNABRUECK
GERMANY

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Product TC Number : LBA TC NO. 644
TC Holder : BÖLKOW
Model : BO 208 - BO 208C JUNIOR

Description of Design Change:

Installation of Funkwerk ATR 833-2K Transceiver with 8.33 KHz channel spacing.

EASA Certification Basis:

The Certification Basis for the original product and the following additional or alternative airworthiness requirements are applicable to this certificate/ approval:
CS-23, Amendment 2

The requirements for environmental protection and the associated certificated noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

See Continuation Sheet(s)

For the European Aviation Safety Agency,

Date of issue: 14.06.2012


European Aviation Safety Agency
Manfred REICHEL
Project Certification Manager
General Aviation

Note:
The following numbers are listed on the certificate:
EASA current Project Number. 0010017312-001

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Associated Technical Documentation:

- Flight Manual Supplement: BO208-150512-01-AFM-01, Rev. 0
or later revisions of the above listed documents approved by EASA.
- Description of Change BO208-150512-01-DCH-01, Rev. 0
- Instructions for Continued Airworthiness BO208-150512-01-CAM-01, Rev. 0

Limitations:

None.

Conditions:

Prior to installation of this modification it must be determined that the interrelationship between this modification and any other previously installed modification and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- end -

genehmigt nur für BO208C S/N 652
approved only for BO208C S/N 652

Note:
The following numbers are listed on the certificate:
EASA current Project Number: 0010017312-001

MINOR CHANGE APPROVAL - 10040147 - AVIONIC-SERVICE LUFTFAHRTELEKTRONIK GmbH

FLIGHT MANUAL SUPPLEMENT**FLIGHT MANUAL SUPPLEMENT**

System	Installation VHF Transceiver Funkwerk Avionics ATR833
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Airplane Manufacturer /TC-Holder	EADS Deutschland GmbH Military Air Systems	A/C Type	A/C Model	S/N
		BO 208	BO 208C	652

This supplement has to be inserted in the flight manual and record sheet amended accordingly. The information contained herein supplements or supersedes the basic Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this document, consult the basic Airplane Flight Manual.

To be inserted in the flight manual and record sheet amended accordingly.

This AFM Supplement is EASA approved under EASA approval No. **10040147**

FLIGHT MANUAL SUPPLEMENT**1. General**

The installed VHF COM Transceiver Funkwerk ATR 833 with FM immunity (ICAO App. 10) supports frequency range 118.000 MHz to 136.975 MHz with frequency spacing 8.33 KHz and 25 KHz.

A detailed description of its capabilities can be found in the Funkwerk Avionics Operational and Installation P/N 01-1403.010.71d*

2. Limitations

No change

3. Emergency Procedures

No change

4. Normal / Abnormal Procedures

Normal / Abnormal VHF COM Transceiver operating procedures are described in the Funkwerk Avionics Operational and Installation Manual P/N 01-1403.010.71d*

*latest revision.

5. Performance

No change to approved airplane flight manual.

Continued Airworthiness Manual

System	Installation VHF Transceiver Funkwerk Avionics ATR833
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This document must be carried in the aircraft maintenance manual at all time. It describes the maintenance procedures for the Funkwerk Avionics ATR833 VHF Transceiver system when it has been installed in accordance with Funkwerk IM 01-1403.010.71d and EASA Minor Change Approval Letter. The information contained herein supplements or supersedes the Basic Airplane Maintenance Manual only in those areas listed herein.

TC-Holder	EADS Deutschland GmbH Military Air Systems	Type	BO 208
TCDS #		Models	Maintenance Manual references
Germany 644		BO 208C	Maintenance Manual BO 208 C Spare Parts Catalog Bölkow BO 208C

In accordance with the manufacturer's instructions, the following scheduled maintenance tasks have to be added to the applicable aircraft maintenance program of the aircraft operator:

Item	Maintenance Task	Reference
1	The VHF COM Transceiver requires periodic checks.	NfL II 25/26-09 or latest regulation superseding this NfL
2	Other than for regulatory periodic functional checks, maintenance of the VHF COM Transceiver is "on condition" only. Maintenance Inspections scheduled on rotational base require a visual inspection of corrosion, mounting and damages of the antenna.	Funkwerk IM 01-1403.010.71d Instructions of related SB, AD, MA, TM etc. have to be complied accordingly. JAA TGL 7, Rev 1, Guidance on airworthiness and operational aspects. AMC-20 (General Acceptable Means of Compliance for Airworthiness of Products, Parts and Appliances) AC 43-206 Avionics Cleaning and Corrosion Prevention/Control
3	Modification of an aircraft for the installation of the VHF COM Transceiver obligates the aircraft operator to include the maintenance information in the operator's Aircraft Maintenance Manual and the operator's Aircraft Scheduled Maintenance Program.	

Reference	none
Appendix	none

Revision	Description	Date
0	Initial Release	15.05.2012

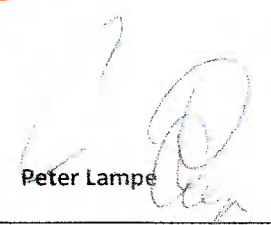
Prepared:

Released:

15.05.2012


Ivonne Harenburg

15.05.2012


Peter Lampe

Date

Name / Signature

Date

Name / Signature

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approved only for BO208C S/N 652

WEIGHT & BALANCE AND ELECTRICAL LOAD-ANALYSIS**Weight & Balance and Electrical Load Analysis**

System	Installation VHF Transceiver Funkwerk Avionics ATR833
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TC Holder	A/C Type	A/C Model	Call Sign	S/N
EADS Deutschland GmbH Military Air Systems	BO 208	BO 208C	D-EJMB	652

Installed VHF COM System

Manufacturer	Installed System	P/N	Installation Manual
Funkwerk Avionic	ATR 833	833-(2xx)-(2xx)	IM 01-1403.010.71d

1. Weight & Balance Analysis / Electrical Load Analysis

Item	IN/OUT	Description	Location	Arm (cm)	Mass (kg)	Moment (cmkg)	Pwr consumt. (A)
1	OUT	AR 2009/25	Panel	175	1.3	227.5	3.5 max
2	IN	ATR 833	Panel	175	0.6	105.0	2.5 max
Change			No change	No change	-0.7	- 122.5	- 1.0

Conclusion

The new installed Flugfunkwerk ATR 833 draws 2.5 A when transmitting. Since the current taken by the Flugfunkwerk ATR833 is similar than of the VHF COMM Transceiver it is replacing, any system that were properly sized to support the de-installed VHF COMM Transceiver will be adequate to support the Flugfunkwerk ATR 833. On the same basis it can be concluded, that the 30 min. battery requirement (CS23.1353) will also be satisfied.

WEIGHT & BALANCE AND ELECTRICAL LOAD-ANALYSIS

2. Record of Revisions

Revision	Description	Date
0	Initial Release	15.05.2012
Reference	none	
Appendix	none	

Prepared:

Released:

15.05.2012
Date

Ivonne Harenburg
Name / Signature

15.05.2012
Date

Peter Lampe
Name / Signature

Analysis performed:

Inspected:

Date

Name/Signature

Date

Name/Signature/License No.

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GROUND TEST REPORT

Ground Test Report

Airplane Manufacturer/ TC-Holder	A/C Type	A/C Model	Call Sign	S/N
EADS Deutschland GmbH Military Air Systems	BO 208	BO 208 C	D-EJMB	852

VHF COM Transceiver Manufacturer	VHF COM Transceiver Type	P/N	Installation Manual
Funkwerk Avionic	ATR 833	833-(2xx)-(2xx)	IM 01-1403.010.71d

Purpose of the test: Functional check of the new installed Funkwerk VHF COM System

Required Regulations:

Installation manual Funkwerk IM 01-1403.010.71d. Verify proper operation of VHF COM Transceiver by testing in accordance with Appendix F to 14 CFR Part 43-ATC Test and Inspection. NfL-25/09 and 26/09 or latest regulation superseding this NfL. The tests and inspections required by CFR 91.413 have been performed and comply with CFR43 appendix F. EASA AD's and SB's have been considered. The test report bases on the annual inspection requirements.

1. Ground Test Procedures

1.1 Perform the Post Installation Configuration and Checkout Procedure of the VHF COM Transceiver System in accordance with the Installation Manual, Chapter Post Installation, Configuration and Check Out Procedure, as per test requirements FAR Part 43, appendix F

Item	pass	fail
Post Installation Configuration and Checkout Procedure	<input checked="" type="checkbox"/>	<input type="checkbox"/>

GROUND TEST REPORT

1.2 Perform groundtest VHF Transceiver

VHF-COM-System

COM 1 Type	ATR 833		S/N	402 719 12	
COM 2 Type	N7		S/N		
Sensitivity	COM 1: -67 dBm		COM 2:		dBm
Frequency	118,00 (MHz)		126,9 (MHz)		135,975 / 136,990 (MHz)
Output Power (Watt)	COM 1	COM 2	COM 3	COM 1	COM 2
	5			55	55
Emergency COM (COM3) Type			S/N		

1.3 Perform an Electromagnetic Non-interference Test

COM 1	COM 2	NAV 1	NAV 2	ADF	MKR	DME	BRNV	AP	WX	ELT	GEN
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item									pass	fail	
Electromagnetic Non-interference Test									<input checked="" type="checkbox"/>	<input type="checkbox"/>	

1.4 Perform the visibility of the VHF COM Transceiver System under all probable lighting conditions

Item	pass	fail
Visibility of the VHF COM Transceiver display under night, day	<input checked="" type="checkbox"/>	<input type="checkbox"/>
... and bright day	<input type="checkbox"/>	<input type="checkbox"/>

1.5 Perform electrical bonding and lightning protection test

Item	pass	fail
Electrical bonding and lightning protection test	<input checked="" type="checkbox"/>	<input type="checkbox"/>

GROUND TEST REPORT

2. Record of Revisions

Revision	Description	Date
0	Initial Release	15.05.2012

Reference	none
Appendix	none

Prepared:

Released:

15.05.2012

Ivonne Harenburg

15.05.2012

Peter Lampe

Date

Name / Signature

Date

Name / Signature

Groundtest performed

Inspected:

24.05.2012

Name/Signature

24.05.2012

Name/Signature/License No.