 Galaxy Aerospace <small>maintenance . repair . overhaul</small> MODIFICATION DOCUMENT	DEMODIFICATION OF KR87 ADF, KRA-10A RAD ALT, CDX-FM657 CD PLAYER AND GMX200 SYSTEMS ON EC120B	
	Doc. No.	GAM281/MD
	Date	13/10/2023
	Revision	0

AIRBUS HELICOPTER EC120B MODIFICATION DOCUMENT



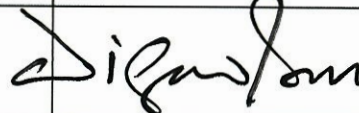


DEMODIFICATION OF KR87 ADF, KRA-10A RAD ALT, CDX-FM657 CD PLAYER AND GMX200 SYSTEMS

IMPORTANT NOTE

The technical content of this document is approved under the authority of the DOA Approval No. DOA/2020/01.

The effectivity of the document at the latest revision is specified on the List of Effective Pages.

Approval Signature

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GAM/DOA.F.006
30/05/2023

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LOG OF REVISIONS

Rev.	Affected Page(s)	Date	Descriptions of Revision	Prepared by	Verified & Approved by	Released by
0	All	13/10/2023	Initial Issue	MIF MY	MAMM FQ	INN

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TITLE: DEMODIFICATION OF KR87 ADF, KRA-10A RAD ALT, CDX-FM657 CD PLAYER AND GMX200 SYSTEMS

1. PLANNING INFORMATION

A. Effectivity

Model	Registration	Serial Number
EC120B	9M-GAS	1089

Table 1: Aircraft Effectivity

B. Classification

This installation is classified as "**MINOR**" as per GAM281/ML

C. Reason

This document is issued in order to provide all necessary instruction on how to perform demodification of the KR87 ADF, KRA-10A Rad Alt, CDX-FM657 CD Player AND GMX200 systems.

D. Description

This Modification Document details the procedure of demodification of the following systems.

i. KR87 ADF


Digitally tuned solid state automatic direction finder which provides bearing information to stations in the frequency range of 200 KHz to 1799 KHz and which also provides audio reception to enable pilot to identify stations. It can be used with single needle KI-227 ADF indicator or dual needle KI-228 indicator

ii. KRA-10A Rad Alt

This system features a 3-inch KI-250 indicator which displays AGL altitude from 20 ft to 2500 ft. The KI 250 also offers continuous selection of Decision Height (DH) and annunciation of arrival at decision Height by both a DH light and aural warning.

iii. CDX-FM657 CD Player

A universal multi CD system.

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iv. GMX200

A multi-function displays capable of displaying moving maps, terrain awareness, obstructions, and VFR/IFR charting functions. It has several charting options that let you add or remove details with the press of a soft key. The Rotary knob allows for quicker map scale changes and entry of data. It also has Front-loading SD™ card slot to easily update charts.

All affected Equipment of this demodification for each system above and their location are as per table below:

NO.	SYSTEM	EQUIPMENT/COMPONENT LIST	LOCATION
1	KR87 ADF (BENDIX/KING KR87 ADF RECEIVER SYSTEM WITH KI-227 INDICATOR)	KING 87 ADF RX	Centre Console
		KI227-00 Indicator	Inst. Panel LH
		KA44 Antenna	Belly Aft Bay
		Circuit Breaker	Cargo CB Panel
2	KRA-10A Rad Alt (BENDIX/KING KRA-10A RADAR ALTIMETER SYSTEM)	KRA10A	Belly Aft Bay
		KI250	Inst. Panel LH
		KA131 Rad Alt Antenna	Belly Aft Bay
		Circuit Breaker	Cargo CB Panel
3	CDX-FM657 CD Player (PIONEER CDX-FM657 10 STACK REMOTE CD PLAYER)	CD Controller	Centre Console
		CDX-FM657	Rear Avionics Shelf
		JAYCAR Kit 88 10X10W Amplifier	Rear Avionics Shelf
		Circuit Breaker	Cargo CB Panel
4	GMX200 (GARMIN GMX200)	MFD	Inst. Panel LH
		Circuit Breaker	Cargo CB Panel

Table 2: Systems. Equipment and location details

E. Compliance

Compliance with this Modification Document is left to the operator's or LAE's initiative.


F. Approval

The technical content of this document is approved under the authority of the DOA Approval No. DOA/2020/01.

G. Manpower

At customer's initiative.

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H. Special Tooling


Nil. Standard tools only.

I. Weight and Balance

The weight and balance are summarized in the following table:

NO	ITEM	TOTAL WEIGHT (kg)	ARM (m)		MOMENT (kg.m)	
			Longitudinal	Lateral	Longitudinal	Lateral
Removal						
1.	KR87	-1.47	2.196	0	-3.23	0
2.	KI-227	-0.32	1.710	-0.380	-0.55	0.12
3.	KA44 ANTENNA	-1.91	3.490	0	-6.97	0
4.	KRA-10A Rad Alt	-0.91	3.490	-0.388	-3.18	0.35
5.	KI 250	-0.41	1.710	-0.388	-0.70	0.16
6.	KA131 Rad Alt Antenna	-0.41	3.490	0.388	-1.43	-0.16
7.	CDX-FM657	-1.90	4.800	-0.388	-9.12	0.74
8.	CD Controller	-0.015	2.196	0	-0.03	0
9.	GMX200	-2.46	1.710	-0.384	-4.21	0.94
10.	Mounting Panel	-1.20	3.490	0	-4.19	0
Total		-11.01	28.28	-1.54	-33.61	2.15
Installation						
Main Instrument Panel						
1.	L-Angle Backing Plate RH, Main Instrument Panel	0.012	1.710	-0.380	0.02	-0.005
2.	L-Angle Backing Plate LH, Main Instrument Panel	0.012	1.710	-0.388	0.02	-0.005

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NO	ITEM	TOTAL WEIGHT (kg)	ARM (m)		MOMENT (kg.m)	
			Longitudinal	Lateral	Longitudinal	Lateral
3.	Backing Plate, Main Instrument Panel	0.034	1.710	-0.384	0.06	-0.013
4.	Round Plate 1, Main Instrument Panel Cover	0.028	1.710	-0.388	0.05	-0.011
5.	Round Plate 2, Main Instrument Panel Cover	0.028	1.710	-0.380	0.05	-0.011
6.	Blank Plate, Main Instrument Panel Cover	0.117	1.710	-0.384	0.2	-0.045
Centre Console						
7.	Plate 1, Centre Console Cover	0.027	2.196	0	0.06	0
8.	Plate 2, Centre Console Cover	0.032	2.196	0	0.07	0
Total		0.29	14.652	-2.304	0.53	-0.09
Weight Change		-10.72	42.93	-3.84	-33.08	2.06

Table 3: Mass and Balance Table

Total weight change for this modification is -10.72 kg, decreasing 0.63% from the Aircraft Maximum Take-Off Weight of 1,715 kg.

Since the weight change is more than 0.5%, Hence, revision for Mass and Balance Records is required.

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J. Electrical Load Analysis

SYSTEM		MAX CURRENT LOAD (A)
INSTALLED	Nil	0.00
TOTAL(A1)		0.00
REMOVED	KR87 ADF	1.01
	KRA-10A Rad Alt	0.20
	CDX-FM657 CD Player	1.00
	GMX200	1.19
TOTAL(A2)		3.4
ELECTRICAL LOAD CHANGES		= A1 – A2 = -3.40

Table 4: Electrical Load Analysis

K. References


1. O.R.I.O.N (Optimized Reader for Internet and Other Networks) for H120
2. 190-00607-04 GARMIN GMX 200 Installation Manual Revision F dated October 2008.
3. 006-05184-0007 Bendix/King KR 87 Automatic Direction Finder KI 227/228 ADF Indicators Maintenance Manual rev. 7 dated July 1998.
4. 006-00152-0003 Bendix/King KRA 10/10A Radar Altimeters Installation Manual Rev. 3 dated November 1985.
5. Pioneer CDX-FM687 Service Manual dated November 2002.

L. Publications Affected

Nil.

M. Software Accomplishment Summary

Not applicable.

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2. ACCOMPLISHMENT INSTRUCTIONS

A. Preparation

1. Prepare all items to be installed during the modification.
2. Prepare the aircraft on the ground for a safe maintenance. Avoid carrying out tasks if the aircraft is on jacks.
3. Disconnect the battery, electrical power sources and/or the external power supply.
4. Identify location of each equipment to be removed i.a.w ED281001.
5. Gain access to the demodification area.

CAUTION NOTES:
OBSERVE ALL RELEVANT SAFETY INSTRUCTIONS

B. Accomplishment

B.1. Mechanical Removal and Installation

B.1.1 Removal of Equipment.

B.1.1.1 Removal of KR87 ADF

1. Locate and gain access for KRA-87 ADF RX, KA44B Antenna, KI227-00 Indicator i.a.w ED281001
2. Remove all fasteners securing the equipment and remove the equipment from its bracket/mounting.


B.1.1.2 Removal of KRA-10A Rad Alt

1. Locate and gain access for KRA10A, KI-250 Indicator i.a.w ED281001
2. Remove all fasteners securing the equipment and remove the equipment from its bracket/mounting.

B.1.1.3 Removal of CDX-FM657 CD Player

1. Locate and gain access for CD Controller, CDX-FM657 and JAYCAR Kit 88 Amplifier i.a.w. ED281001.
2. Remove all fasteners securing the equipment and remove the equipment from its bracket/mounting.

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B.1.1.4 Removal of GMX200

1. Locate and gain access for GMX200 MFD i.a.w ED281001
2. Remove all fasteners securing the equipment and remove the equipment from its bracket/mounting.

B.1.2 Relocation of Equipment.

B.1.2.1 Relocation Of Transponder Gtx320

1. Relocate Transponder GTX320 as per ED281001.

B.1.3 Structure Fabrication.

B.1.3.1. Fabrication of Blank Plate

1. Fabricate all blank plate in accordance with ED281002.

B.1.4 Installation of Blank Plate

1. Identify the location of blank plates to be installed with fasteners as per ED281001.
2. Gain access to the respective panel identified.
3. Install all blank plates in accordance with ED281001 and ED281002

B.2. Electrical Removal

B.2.1 Removal of King KRA-10A Rad Alt System.

1. Refer ED281001 for location of KRA10A, KI-250 Indicator, KA131 Antenna and the circuit breaker.
2. Remove all related King KRA-10A rad alt system wiring in accordance with ED281003.
3. Install the circuit breaker collar P/N: S4933959-501 to the circuit breaker.


B.2.2 Removal of Garmin GMX200 System.

1. Refer ED281001 for location of GMX200 MFD and its circuit breaker.
2. Remove all related GMX200 system wiring in accordance with ED281003.
3. Install the circuit breaker collar P/N: S4933959-501 to the circuit breaker.

B.2.3 Removal of King KRA-87 ADF System.


1. Refer ED281001 for location of KRA-87 ADF RX, KI227-00 Indicator, KA44B Antenna and its circuit breaker.
2. Remove all related KRA-87 ADF system wiring in accordance with ED281003.
3. Install the circuit breaker collar P/N: S4933959-501 to the circuit breaker.

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B.2.4 Removal of CDX-FM657 CD Player System

1. Refer ED281001 for location of CD Controller, CDX-FM657 and JAYCAR Kit 88 Amplifier.
2. Remove all related CDX-FM657 CD Player System wiring in accordance with ED281003.
3. Install the circuit breaker collar P/N: S4933959-501 to the circuit breaker.

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C. Operating and Maintenance Instructions

C.1. Operating Instructions

Not applicable.

C.2. Maintenance Instructions

Refer to Instruction for Continued Airworthiness, GAM281/ICA, Revision 0 or latest approved revision.

3. MATERIAL INFORMATION

A. New / Retained Parts

Refer to bill of materials in ED281001 and ED281003 Revision 0 or latest approved revision.

B. Replacement Parts

Nil.

C. Re-identified Parts

Nil.