| 1. Approving competent Authority / Country | 2. | 3. Form Tracking Number |
|---|---|---|
| **CAA / UK** | **AUTHORISED RELEASE CERTIFICATE**<br>**CAA FORM 1** | S190016585-0010-0001-U |
| 4. Organisation Name and Address | **LIEBHERR-AEROSPACE TOULOUSE SAS**<br>408, avenue des Etats-Unis - B.P. 52010<br>F - 31016 TOULOUSE CEDEX 2 - FRANCE | 5. Work Order / Contract / Invoice<br>R399118 |

| 6. Item | 7. Description | 8. Part No. | 9. Qty | 10. Serial No. | 11. Status/Work |
|---|---|---|---|---|---|
| 1 | HEAT EXCHANGER-RAM | 81253A010001 | 1 | 81253-00553 | Repaired |

12. Remarks

See : INSPECTION ANALYSIS AND CORRECTIVE ACTION REPORT N°3024552 dated 07 Nov 2022

ACTION : Repair

Approved data : CMM 21-51-90 Rev 6 dated 27 Aug 2018

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13a. Certifies that the items identified above were manufactured in conformity to:

☐ approved design data and are in a condition for safe operation

☐ non approved design data specified in block 12

14a. ☒ Part-145.A.50 Release to Service ☐ Other regulation specified in block 12

**Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12 was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.**

| 13b. Authorised Signature | 13c. Approval / Authorisation Number | 14b. Authorised Signature | 14c. Approval / Authorisation Number |
|---|---|---|---|
| | | Georges MARTINS<br>Electronic Signature on File | **UK.145.01602** |
| 13d. Name | 13e. Date (dd mmm yyyy) | 14d. Name | 14e. Date (dd mmm yyyy) |
| | | Georges MARTINS<br>*CERTIFYING INSPECTOR*<br>*HABILITATION N° 65*<br>LTS<br>S E | 08 NOV 2022 |

**User / Installer Responsibilities**

**This certificate does not automatically constitute authority to install the item(s). Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1. Statements in blocks 13a and 14a do not constitue installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.**

| 1. Approving competent Authority / Country<br>*Autorité compétente / Pays*<br>**DIRECTION GÉNÉRALE DE L'AVIATION CIVILE / FRANCE** | 2. **AUTHORISED RELEASE CERTIFICATE**<br>**EASA FORM 1**<br>*Certificat libératoire autorisé / Formulaire 1 de l'EASA* | 3. Form Tracking Number<br>*N° de repère du Formulaire*<br>S190016585-0010-0001-F |
|---|---|---|
| 4. Organisation Name and Address<br>*Nom et adresse de l'organisme* | **LIEBHERR-AEROSPACE TOULOUSE SAS**<br>408, avenue des Etats-Unis - B.P.52010<br>F - 31016 TOULOUSE CEDEX 2 - FRANCE | 5. Work Order / Contract / Invoice<br>*Bon de commande / Contrat / Facture*<br>R399118 |

| 6. Item<br>*Item* | 7. Description<br>*Description* | 8. Part No.<br>*N° de pièce* | 9. Qty<br>*Qté* | 10. Serial No.<br>*N° série* | 11. Status/Work<br>*Etat / Travaux* |
|---|---|---|---|---|---|
| 1 | HEAT EXCHANGER-RAM | 81253A010001 | 1 | 81253-00553 | Repaired |

12. Remarks / *Remarques*

See : INSPECTION ANALYSIS AND CORRECTIVE ACTION REPORT N°3024552 dated 07 Nov 2022

ACTION : Repair

Approved data : CMM 21-51-90 Rev 6 dated 27 Aug 2018

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Dual-release :
- The work identified in Block 11 and described herein has been accomplished in accordance with 14 CFR part 43 and in respect to that work, the items are approved for release or return to service under certificate n° B8EY828J

13a. Certifies that the items identified above were manufactured in conformity to:
*Certifie que les éléments identifiés ci-dessus ont été fabriqués conformément aux :*

☐ approved design data and are in a condition for safe operation
*données de conception approuvées et sont en état de fonctionner en toute sécurité*

☐ non approved design data specified in block 12
*données de conception non approuvées spécifiées en case 12*

14a. ☒ Part-145.A.50 Release to Service
*Approbation pour remise en service selon Partie 145.A.50*

☒ Other regulation specified in block 12
Autre réglementation précisée en case 12

**Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12 was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.**
***Certifié que, sauf indication contraire spécifiée en case 12, les travaux identifiés en case 11 et décrits en case 12 ont été réalisés conformément à la Partie 145 et qu'au vu de ces travaux, les pièces sont considérées prêtes à la remise en service.***

| 13b. Authorised Signature / *Signature autorisée* | 13c. Approval / Authorisation Number<br>*Numéro d'agrément / d'authorisation* | 14b. Authorised Signature / *Signature autorisée*<br>Georges MARTINS<br>Electronic Signature on File | 14c. Approval / Authorisation Number<br>*Numéro d'agrément / d'authorisation*<br>**FR.145.0071** |
|---|---|---|---|
| 13d. Name / *Nom* | 13e. Date (dd mmm yyyy) / *(jj mmm aaaa)* | 14d. Name / *Nom*<br>Georges MARTINS<br>*CERTIFYING INSPECTOR*<br>*HABILITATION N° 65*<br>LTS S E | 14e. Date (dd mmm yyyy) / *(jj mmm aaaa)*<br>08 NOV 2022 |

**User / Installer Responsibilities**
**This certificate does not automatically constitute authority to install the item(s). Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1. Statements in blocks 13a and 14a do not constitue installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.**

***Responsabilités de l'utilisateur / installateur***
***Ce document ne constitue pas forcément l'autorisation d'installer l'(es) item(s). Quand l'utilisateur/installeur travaille selon les réglementations d'une autorité de navigabilité différente de l'autorité de navigabilité mentionnée dans la case 1, il est essentiel que l'utilisateur/installeur s'assure que son autorité de navigabilité accepte les items libérés par l'autorité de navigabilité mentionnée dans la case 1. Les indications portées en cases 13a et 14a ne constituent pas une certification de montage. Dans tous les cas le dossier d'entretien de l'aéronef doit contenir une certification d'installation délivrée conformément aux règlements nationaux par l'utilisateur/installateur avant que l'aéronef puisse voler.***

LIEBHERR

Liebherr Aerospace Toulouse SAS, 408 avenue des Etats Unis, BP 52010, F-31016 Toulouse Cedex 2, France

# SHOP FINDING REPORT

**LIEBHERR REPAIR DOSSIER:** 3024552
**RECEPTION DATE:** 29 AUG 2022
**CUSTOMER PURCHASE ORDER:** R399118
**OPERATOR:** SILK WAY WEST AIRLINES LLC
**AIRCRAFT TYPE:** B747-8
**AIRCRAFT REG. NUMBER:** VQ·BVC

## RECEIVED UNIT

**PART NUMBER:** 81253A010001
**AMENDMENT:** -
**SERIAL NUMBER:** 81253-00553
**DESCRIPTION:** HEAT EXCHANGER-RAM
**CONCESSION:** N/A
**MANUFACTURING CODE:** F1958
**MANUFACTURING DATE:** 052016

## DELIVERED UNIT

**PART NUMBER:** 81253A010001
**AMENDMENT:** -
**SERIAL NUMBER:** 81253-00553
**DESCRIPTION:** HEAT EXCHANGER-RAM
**CONCESSION:** N/A

## TIMES & CYCLES

| | TSN | TSO | TSI | CSN | CSO | CSI |
|---|---|---|---|---|---|---|
| PN IN | N/A | N/A | N/A | N/A | N/A | N/A |
| PN OUT | N/A | N/A | N/A | N/A | N/A | N/A |

**INSTALLATION DATE:** N/A
**LOG CARD EXISTING:** No
**LIFE LIMITED PARTS:** No
**REMOVAL DATE:** N/A
**NON INCIDENT STATEM.:** No

**MAINTENANCE DOSSIER:** /81253A010001 / VERSION 15
**APPROVED DATA:** CMM 21-51-90 Rev. 6 dated 27 AUG 2018
**MODIFICATION DOCUMENTS:** N/A

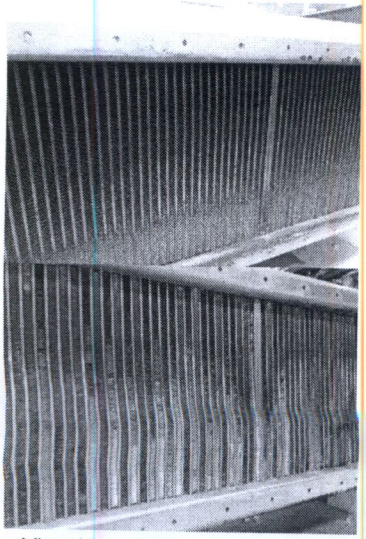
**CERTIFICATE REQUESTED:** CAAC TRI RELEASE
**WARRANTY REQUESTED:** NO
**WORK REQUESTED:** TEST, REPAIR
**WORK PERFORMED:** Major repair
**WARRANTY DECISION:** N/A
**Comments :** -

## REASON FOR RETURN:

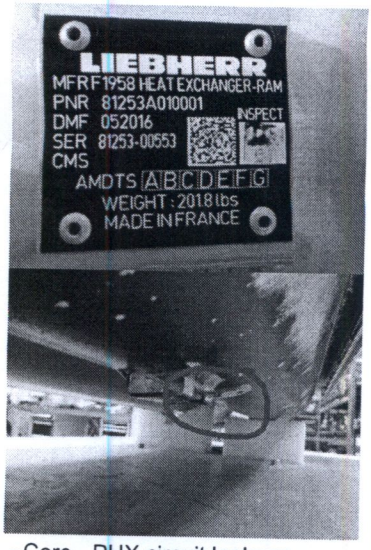
TIME EXPIRATION

## FINDINGS AND ANALYSIS

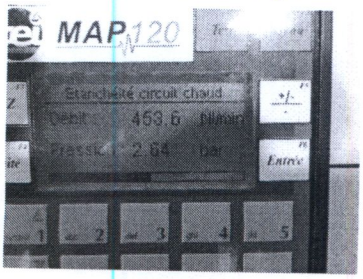
- Visual inspection - Exchanger dirty



- Visual inspection - Bonding lug damaged

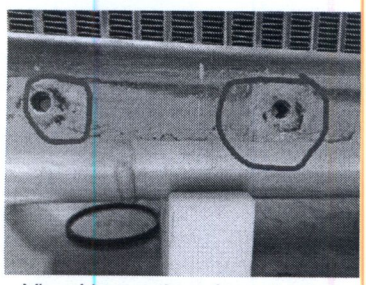



- Core - PHX circuit leakage

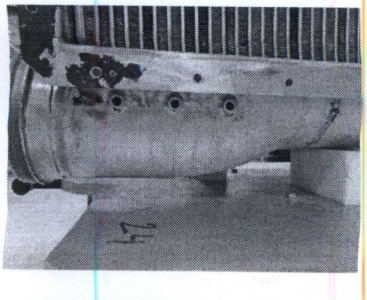




- Visual inspection - Local frames corrosion



- Visual inspection - Important varnish deterioration



## WORK PERFORMED:

- Repair of bonding areas
- Receipt PN / GoNoGo
Visual inspection - Cleaning - Leakage test - Drop pressure test
- Corrosion removal
- Repair of the Core leak
- New alodine coating application
- New varnish coating application

## LIFE LIMITED PARTS:

N/A

## SHOP FINDING REPORT APPROVED:

**VALIDATION DATE** 07 NOV 2022
**VALIDATED BY:** Xavier LEVY