infinion
Certification Engineering Inc.

ENGINEERING CHANGE ORDER
ECO-2068-03

TCCA File No.:	N/A	**Change No:**	ECO-2068-03

Title/Subject : **CREW BARRIER** ATA Chapter: 25-24

A protective barrier is installed between pilots and passengers.

Classification: ~~MAJOR~~ / MINOR*	Infinion Project No:	2068
	STC No:	N/A

A/C Type : Bell	**Variant :** 407	**Serial No. :** See Para 10	**Reg No. :** See Para 10

Reason / Brief Description :

To protect flight crew against droplet borne transmission of pathogens, an AAL Crew Barrier is installed.

Refer to page 3 for detailed description of the Change.

Drawings : New / ~~modified~~ / ~~No longer required~~ **	**Reports : :** New / ~~Existing~~ / ~~Amended~~ *

Documents Affected* : ~~AFM / ACM~~ / AMM ~~/ AMS / MMEL / O'HAUL M / CMM /~~ WEIGHT & BALANCE ~~/ OTHER~~ :

	Issue:	1				
	Date:	30 April 2020				
	Status:	Closed				
Author:	Name:	SN Clark				
	Date:	30 April 2020				
Checked:	Name:	T Smith				
	Date:	30 April 2020				
Approved:	Name:	TC Clark				
	Signature:	TC Clk				
	Date:	30 April 2020				

The approval of this Change signifies that the Design definition is technically satisfactory, and is considered Closed.

I hereby declare that this design change complies with the airworthiness and environmental protection requirements of the subject aircraft or component and the data described herein is acceptable to define the change.

* This MINOR Change is approved under the authority of DAR 326.

* ~~The technical content of this MAJOR Change is approved under the authority of TCCA DAR 326, however final approval will be granted by TCCA approved STC~~.

Except for the differences resulting from the Change(s) listed herein, the design of the above aircraft has not been changed in any way.

With the exceptions listed below, the design of the Change to this aircraft complies with the relevant TCCA requirements.

Limitations: NONE

* = Delete as necessary

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REVISION HISTORY			
ISSUE	**PREPARED BY**	**DATE**	**DESCRIPTION OF CHANGES**
1	SN Clark	30 Apr 2020	Initial Release

	Issue:					
	Date:					
	Status:					
Author:	Name:					
	Signature:					
	Date:					
Checked:	Name:					
	Signature:					
	Date:					
Approved:	Name:					
	Signature:					
	Date:					

DETAILS OF CHANGE

1. Introduction

The Bell 407 aircraft is a Normal Category Rotorcraft. In order to have an added level of protection for flight crew against droplet borne transmission of pathogens, an AAL Crew Barrier is installed. The Crew Barrier Kit allows for quick installation and removal of the barrier blanket in case of emergency, or for sanitization.

2. Description of Change

A barrier blanket is fabricated in accordance with Alpine Aerotech data.

CHANGE INSTRUCTION:

Preparation:

1. Procure Crew Barrier Kit PN AAL-391-010-001 from Alpine Aerotech.

Installation

1. Install in accordance with Alpine Aerotech Installation Instruction AAL-391-015-001.

3. Certification Basis

The Bell 407 helicopter is certified in normal category under Transport Canada Type Certificate number H-92. The certification basis is FAR 27 effective February 1,1965 including Amdts 27-1 through 27-30, with additions and exceptions as defined in the Type Certificate Data Sheet.

This modification has been determined to be other than major. A Supplemental Type Certificate is not required. Evaluation of the applicable affected standards of airworthiness is summarized in Section 4.

4. Compliance with Requirements

The following requirements are evaluated:

Subpart B - Flight

FAR 27.29 amdt 27-14 – Empty Weight and Centre of Gravity Limits. See section 6.

Subpart C – Strength Requirements

The barrier is a non-required, non-structural component. It does not need to meet the strength requirement standards. Maintenance is on-condition, and damaged components are replaced as required. The strength of the Velcro (6 lb per square inch nominal holding force) is adequate for restraint of the barrier net (less than 2 lb) by inspection.

FAR 27.561 andt 27-30 – Emergency Landing Conditions, General. The barrier will not create a hazard to the aircraft occupants as a result of inertia forces generated in the event of an emergency landing.

Subpart D – Design and Construction

FAR 27.601 amdt 27-0 – Design. The barrier does not introduce unreliable or questionable details.

FAR 27.603 amdt 27-16 – Materials. Materials are suitable and durable for the intended function.

FAR 27.605 amdt 27-16 – Fabrication Methods. Fabrication is traditional and suitable.

FAR 27.771 amdt 27-0 – Pilot Compartment. The ability of the pilot to perform their duties is not affected. The opening between pilot and passenger compartment is affected only by a soft barrier that has a means of rapid removal when required. Visual line of sight between the pilot compartment and passenger compartment is maintained by a clear section of the barrier.

FAR 27.831 amdt 27-0 – Ventilation. The cabin and crew compartments are separately ventilated. Airflow is not significantly altered.

FAR 27.853 amdt 27-17 – Compartment Interiors. All materials used in fabrication of the barrier are demonstrated by test to meet at least the 2.5 inch/min horizontal burn test requirements of FAR 25 Appendix F, which exceeds the requirements of the basis of certification (Flame Resistant, ref AC23-2A). Most of the materials are demonstrated to meet the 12 Second Vertical Burn test requirement, which is even more stringent.

Subpart F - Equipment

FAR 27.1301 amdt 27-0 – Function and Installation. The barrier is designed to protect the cockpit occupants from droplet borne pathogens. The materials selected are impermeable and will function as intended. A maintenance flight is performed to verify that the barrier will not present a hazard or distraction during flight due to air currents or differential pressures.

Subpart G – Operating Limitations and Information

FAR 27.1501 amdt 27-14 – General. Removal of the barrier is a simple and obvious process.There are no markings or instructions added or affected.

FAR 27.1529 amdt. 27-18 – Rotorcraft Maintenance Manual. Instructions for Continued Airworthiness are provided to the operator for installation, removal, and maintenance of the barrier.

5. Manuals

Instructions for Continued Airworthiness are provided for maintenance of the barrier kits. Ensure the following document is added to the aircraft maintenance records.

AAL-391-015-701 – Instructions for Continuing Airworthiness, Crew Barrier Kit

6. Weight and Balance

A weight and balance revision is required in accordance with Canadian Aviation Regulations (CAR) 571. Weight and station information is included in the installation instructions. Add the applicable details to the rotorcraft equipment list.

7. Ground / EMC / Flight Test

A Flight Test is not required for the approval of this Change. Refer to Section 4 for test requirements.

8. Noise & Enviromental

Not applicable.

9. Limitations/Concessions

None.

10. Aircraft Effectivity

Bell 407, all SNs.

11. Applicable Reports and Drawings

Applicable Reports or Documents		
Document Ref.	**Issue**	**Document Description**
AAL-391-015-001	Rev. NI	Installation Instructions Crew Barrier, Kit
AAL-391-015-701	Rev. NI	Instructions for Continuing Airworthiness Crew Barrier, Kit

Reference Data		
Drawing No.	**Issue**	**Title / Description**
AAL-391-014-001	Rev. NI	Alpine Aerotech Master Data List: Crew Barrier, Kit

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