Service Bulletin

Service Bulletin: SB EC145-624; Eurocopter EC145 Air Conditioner Aft Evaporator Condensation Prevention & Air Outlet Up-grade.

Subject: Up-grade of existing Eurocopter EC145 Air Conditioners equipped with the EC145-6028-2 Aft Evaporator Assembly, due to condensation issues in the main cabin overhead & air outlets.

Date: 10 May 2007, Rev N/C

Applicability: Eurocopter Helicopter model EC145 Equipped with the Air Comm Corporation EC145-200 Dual Forward Evaporator Air Conditioning System.

Reference:
1. FAA / STC # SR00565DE, Eurocopter Helicopter EC145 Air Conditioning System.
2. EC145-200 General Arrangement Drawing.
3. EC145-624 Aft Evaporator Installation Drawing.
4. EC145-6030 Aft Evaporator Assembly Drawing.
5. EC145-200M-1 Instructions for Continued Airworthiness

Compliance: At the discretion of the operator.

I. Discussion:

Operators in the field have noted condensation forming on the exterior of the aft evaporator housing, as well as around the aft evaporator air outlets which are attached to the bottom of this assembly.

II. Approval:

Technical aspects of this Service Bulletin are FAA / DER approved.

III. Purpose:

The purpose of this bulletin is to install "closed cell" foam insulation to the exterior of the aft evaporator housing, and provide new air outlets for the bottom of the evaporator assembly. The addition of these items is to prevent the formation of condensation on the exposed surfaces of these areas.

IV. Bill of Materials:

Parts to be Removed:

Item	Part Number	Description	Quantity
1	804-297	Receiver Drier	1
2	440-840	#6 O-ring	3
3	EC145-6012-18	Closeout	1
4	ES72226-1	Air Outlet	6
5	2-012-N1173	#6 O-ring	1
6	2-014-N1173	#8 O-ring	1

Parts to be Installed:

Item	Part Number	Description	Quantity
1	804-297	Receiver Drier	1
2	440-840	#6 O-ring	3
3	EC145-6012-2	Plenum	2
4	EC145-6012-22	Closeout	1
5	ES72183-4	Air Outlet	4
6	AA-32R	Rivet	8
7	2-012-N1173	#6 O-ring	1
8	2-014-N1173	#8 O-ring	1
9	ES06022-1	1/8" Foam Tape	30'
10	4HU10	RTV (Black)	10.1 Fl. oz

Please contact the Air Comm Corporation Service Department to obtain these parts at no charge.
Phone 303-440-4075, Fax 303-440-6355, E-Mail info@aircommcorp.com

V. Accomplishment Instructions:

CAUTION

It is recommended that the battery and external power be disconnected before starting work.

NOTE

It will be necessary to discharge the refrigerant from the air conditioner system to accomplish this Service Bulletin. Please refer to the EC145-200M-1 Instructions for Continued Airworthiness, Chapter 5 Servicing.

NOTE

Any repairs or alterations to the airframe or its components not specifically covered in this document or specified in the ACC / FAA approved documents listed on page 1, shall revert to *AC43-13 Standard Practices*, and or the *EC145 Structural Repair Manual* to complete the necessary removal, alteration, and replacement of the aft evaporator assembly.

Continued

Accomplishment Instructions (continued).

Removal:

1. Discharge / Recover refrigerant form the air conditioner system, refer to Chapter 5 of the EC145-200M-1 Instructions for Continued Airworthiness for Servicing Information.

NOTE

It will be necessary to remove the overhead cabin roof interior panel to access the Aft Evaporator Assy.

2. Disconnect the Molex connector to the EC145-6028-2 Aft Evaporator Blowers (2 Pls).

3. Disconnect the CAT ducting from the aft evaporator blower inlets and outlets.

4. Disconnect the refrigerant lines from the aft evaporator (3 Pls.)

CAUTION

Always use a "back up" wrench when loosening or tightening any refrigerant fitting or connection.

NOTE

It will be necessary to remove the forward transmission cowling to access the Aft Evaporator mounting bolts.

CAUTION

Support the Aft Evaporator prior to the removal of the mounting hardware. This is to insure that there is no damage to the Evaporator assembly or the aircraft when the mounting bolts are removed.

NOTE

It will be necessary to remove the L/H overhead headliner support rail, in order to remove the Aft Evaporator Assembly.

5. Remove the four (4) AN3-4A Bolts which hold the forward portion of the Aft Evaporator in place.

6. Remove the two (2) AN3-10A Bolts which hold the aft portion of the Aft Evaporator, and remove the evaporator from the aircraft.

NOTE

Support the Aft Evaporator so that the expansion valve is protected from being damaged. Cap all exposed refrigerant lines to prevent contamination to the system.

Modification of the EC145-6028-2 Aft Evaporator:

1. Support the Aft Evaporator assembly to provide access to the six ES72226-1 air outlets. Remove the outlets by unscrewing them from the Evaporator Assembly, and remove the EC145-6012-18 Closeout.

2. Scribe or mark a line around the top of the existing EC145-6012-1 Plenum, as shown in figure 1-1.

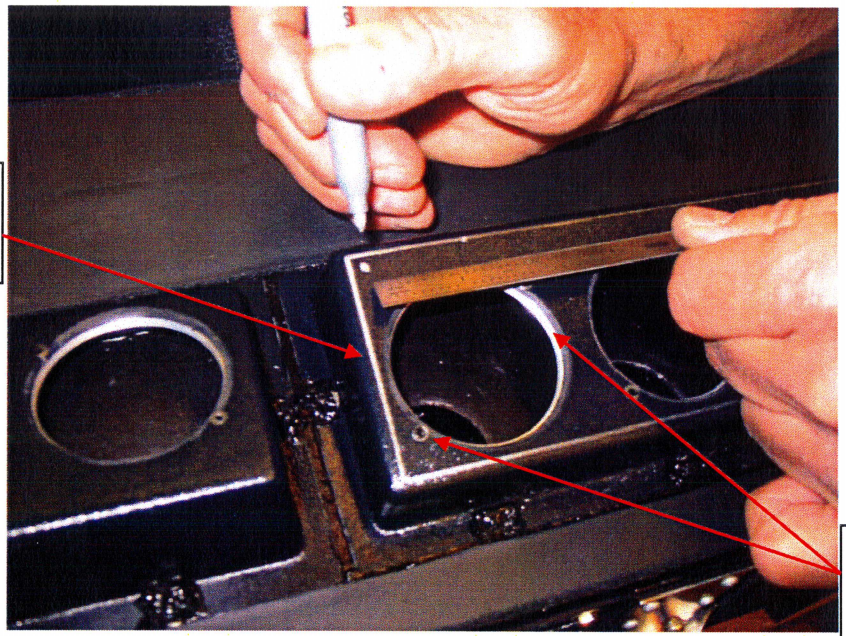

Figure 1-1
View looking down at the EC145-601-1 Plenum Assy.

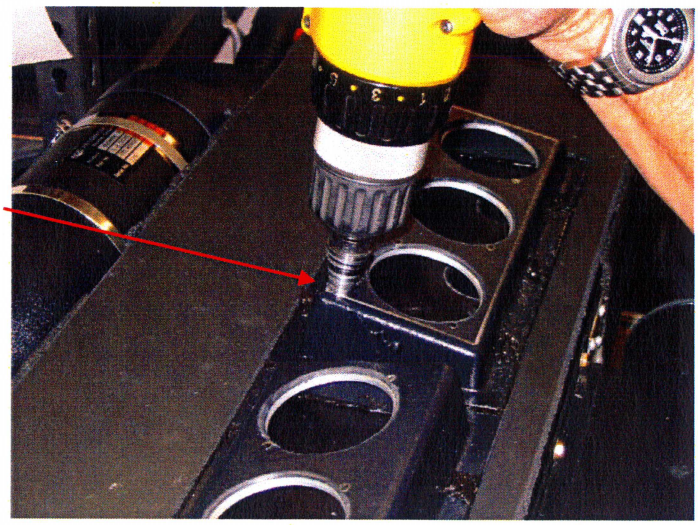

Figure 1-2
Continued

Modification continued:

3. After stop drilling all of the corners as shown in Figure 1-2, use a razor knife or other suitable cutting devise to cut away the top surface of the Plenum, as shown in Figures 1-3 & 1-4.

NOTE

Only the top portion of the Plenum is to be removed, as the sides and bottom are to be retained to fasten the new Plenum assembly to the Aft Evaporator.

Cut along the previously scribed or drawn lined using a razor knife or equivalent.

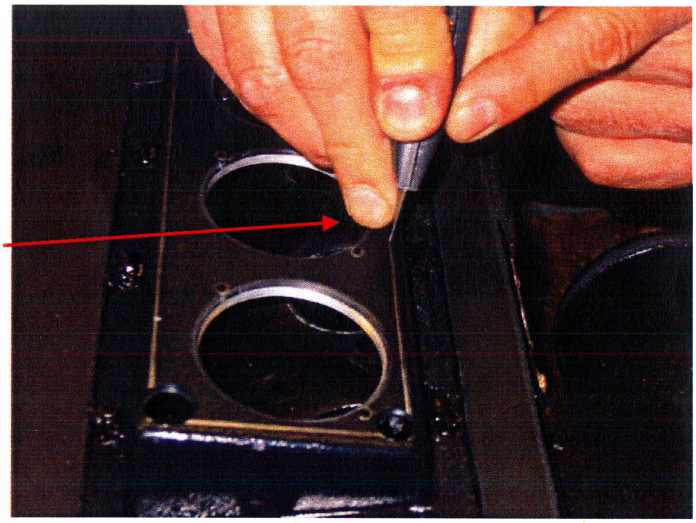

Figure 1-3

Remove and discard the top portion of the existing plenum assembly. (2 Pls.)

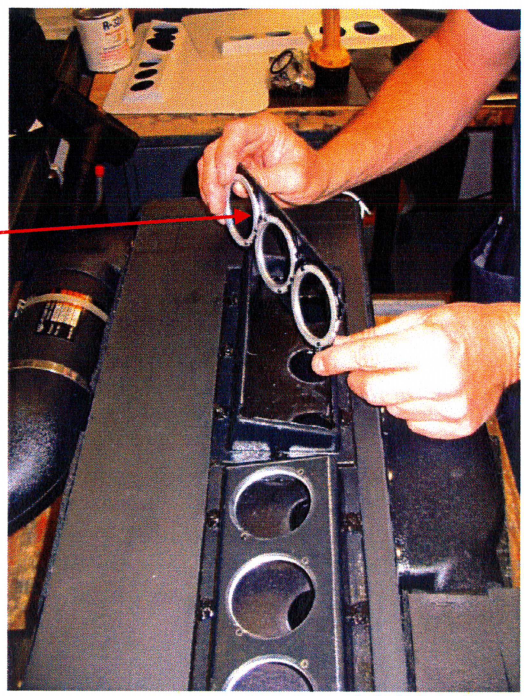

Figure 1-4

Continued

Modification continued:

4. Install the two (2) new EC145-6012-2 Plenums on to the Aft Evaporator Assembly as shown in Figure 1-5, and match drill four (4) places, using a #40 drill bit on each Plenum.

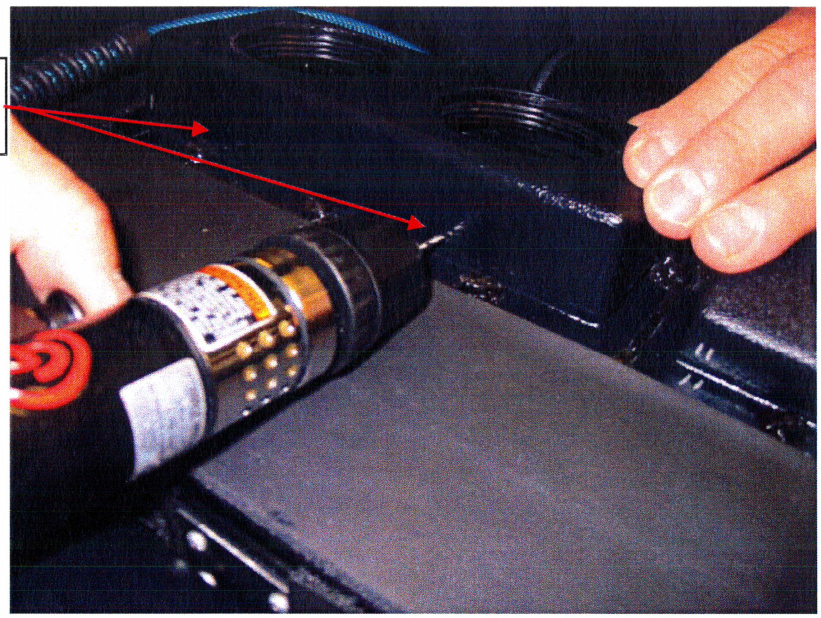

Figure 1-5

5. Install four (4) AA-32R Rivets to attach the new EC145-6012-2 Plenum to the Aft Evaporator Assembly, as shown in Figure 1-6.

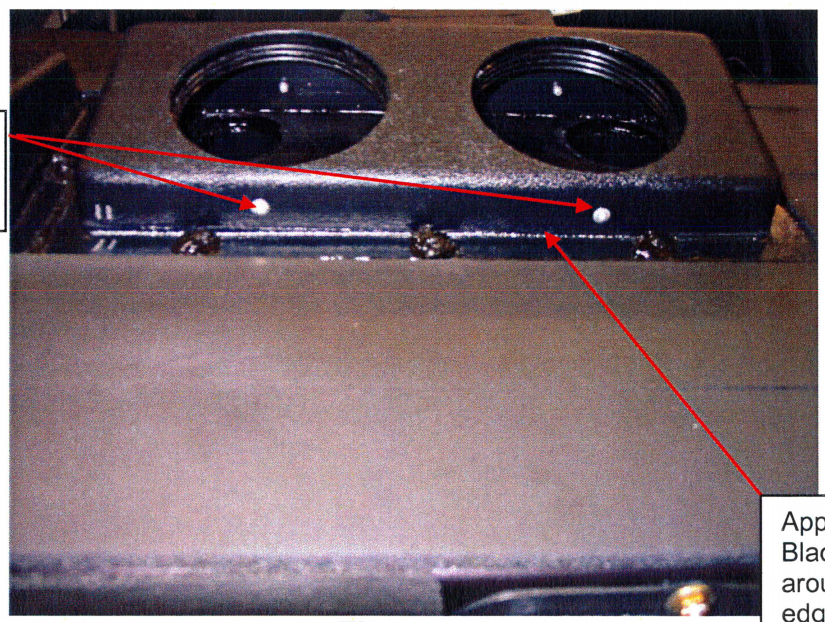

Figure 1-6

Continued

6. Apply a single layer of the ES06022-1 1/8" foam tape to all of the exposed metal surfaces of the Aft Evaporator Assembly as shown in Figure 1-7 & 1-8

NOTE

Wipe all surfaces to which the foam tape is to be applied, with denatured alcohol (only) to insure a clean surface for the tape to adhere to.

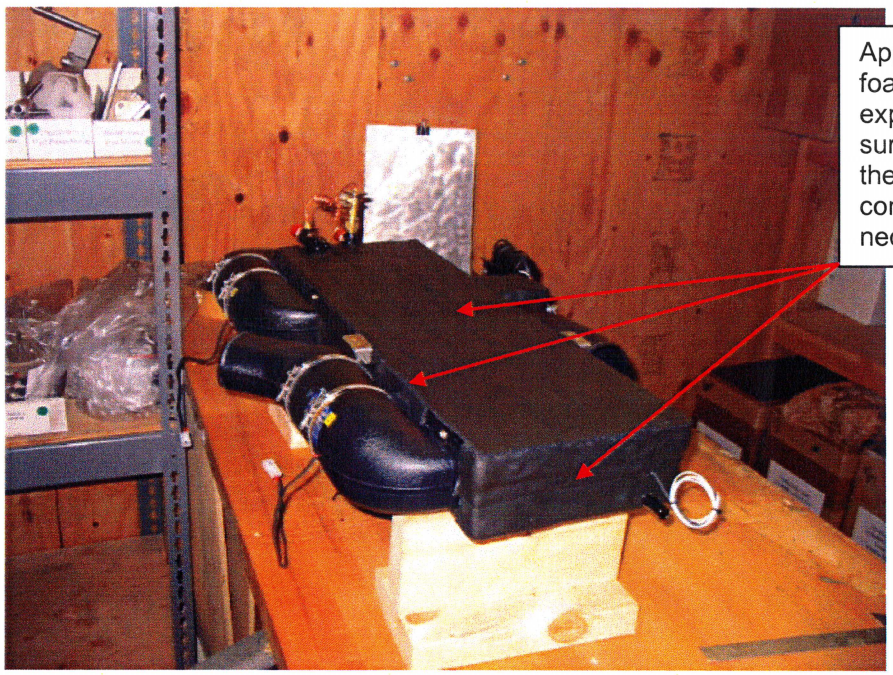

Figure 1-7

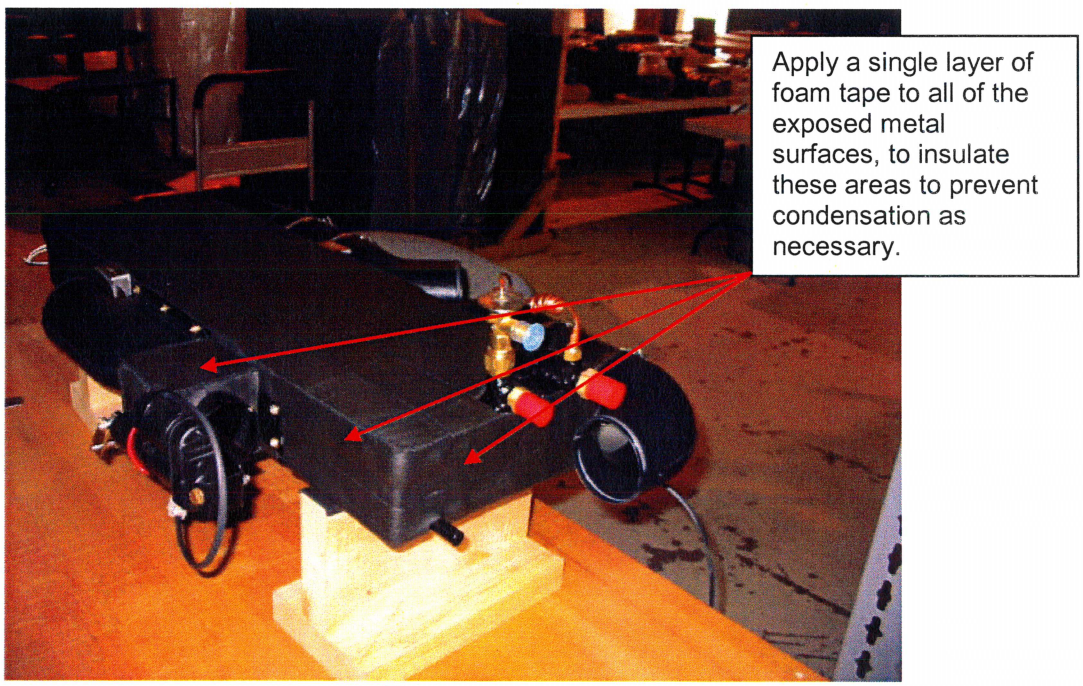

Figure 1-8

Installation:

1. Install the Aft Evaporator in the reverse order of its removal.

2. Service the air conditioner system with R134a refrigerant. Please refer to the EC145-200M-1 Instructions for Continued Airworthiness, Chapter 5 Servicing.

Weight and Balance:

The weight change for this modification is negligible, and therefore no change to the aircraft weight and balance is required.

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