# REVISION LIST

## CHAPTER 22: CABIN VENTILATION

The following list of revisions will allow you to update the Legacy construction manual chapter listed above.

Under the “Action” column, “R&R” directs you to remove and replace the pages affected by the revision. “Add” directs you to insert the pages shows and “R” to remove the pages.

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<tr>
<td>22-1 through 22-2</td>
<td>0/02-15-02</td>
<td>None</td>
<td>Current revision is correct</td>
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<tr>
<td>22-3</td>
<td>0/09-18-02</td>
<td>R&amp;R</td>
<td>Corrected Fig. 22:B:1</td>
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<td>22-4</td>
<td>0/09-18-02</td>
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<td>22-1</td>
<td>2/06-30-04</td>
<td>R&amp;R</td>
<td>Updated parts list.</td>
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<td>22-1</td>
<td>3/12-15-04</td>
<td>R&amp;R</td>
<td>Updated table of contents with page numbers.</td>
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<td>22-3</td>
<td>3/12-15-04</td>
<td>R&amp;R</td>
<td>Removed reference to figure 22 B:3 which does not exist.</td>
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<td>4/09-30-06</td>
<td>R&amp;R</td>
<td>Corrected two part abrs. in parts list.</td>
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<td>22-2</td>
<td>4/09-30-06</td>
<td>R&amp;R</td>
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Chapter 22: Cabin Ventilation

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1. INTRODUCTION

The Legacy cabin ventilation consists of a fresh air system and cabin heat.

1. Fresh Air. On each side of the fuselage there is a NACA scoop which is the intake for the fresh air. As part of the fresh air system we suggest installing adjustable eyeball vents available through KCI.

2. The source of the cabin heat is through a heat muff installed on the exhaust. The heat muff is installed on the left exhaust pipe on the Continentals and on the right exhaust pipe on Lycomings. The heated air is routed to a cabin heat valve installed on the firewall. From the heat valve the air is either dumped overboard or routed to the defroster or directly into the cabin.

   The cabin heat system is optional and available through KCI.

   An important part of the cabin air system is an exit. We suggest providing a passage in the baggage bulkhead for the air to exit. One creative way of doing this is to find a nice (smaller) loud speaker cover. This will allow the air to exit into the tail cone and out through the elevator weldment covers.

2. PARTS LIST

<table>
<thead>
<tr>
<th>#</th>
<th>PART NO. (P/N)</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>OPTIONAL ITEM</th>
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<tr>
<td>FRESH AIR (UNHEATED)</td>
<td></td>
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</tr>
<tr>
<td>1)</td>
<td>4021-01</td>
<td>1</td>
<td>NACA Scoop Closeout</td>
<td></td>
</tr>
<tr>
<td>2)</td>
<td>4021-02</td>
<td>1</td>
<td>NACA Scoop Closeout</td>
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| 3) | KEV0110 | 2 | Eyeball Vent | **Yes**
| 4) | MS2469-C46 | 8 | Machine Screw | **Yes**
| 5) | K1000-08 | 4 | Nutplates | |
| 6) | MSC-34 | 8 | Rivets | |
| CABIN HEAT*/CABIN DEFROSTER* | | | | |
| 1) | 4933-01 | 1 | Cabin Heat Valve | **Yes**
| 2) | 4933-02 | 1 | Cabin Heat Valve Cap | **Yes**
| 3) | AN3-3A | 1 | Bolt, Undrilled | **Yes**
| 4) | AN3-7 | 1 | Bolt, Drilled | **Yes**
| 5) | A700-BK-3 | 1 | Cable, Button Lock | **Yes**
| 6) | 145-0004-14K16 | 2 | Clamp, Hose | **Yes**
| 7) | 145-0005-14K16 | 3 | Clamp, Hose | **Yes**
| 8) | MS21919-DG20 | 1 | Clamp, Loop Type | **Yes**
| 9) | AN742D4 | 1 | Clamp, Plain Loop Type | **Yes**
| 10) | SCAT - 5 | 14' | Ducting | **Yes**
| 11) | SCET - 6 | 11' | Ducting | **Yes**
| 12) | 561 | 1 | Inlet Flange | **Yes**
| 13) | AN363-1032 | 4 | Locknut | **Yes**
| 14) | AN365-1032A | 2 | Locknut | **Yes**
| 15) | 05-16100 | 1 | Terminal Bolt Kit | **Yes**
| 16) | AN960-10L | 4 | Washer, Flat | **Yes**
| 17) | AN960-10 | 1 | Washer, Flat | **Yes**

Note: 4933 Cabin Heat System, w/ Above Items

Note:
Optional Parts available through:
(*) Lancair Avionics
(**) Kit Components, Inc.
3. CONSTRUCTION PROCEDURES

A. Fresh Air (Unheated)

The eyeball vents for fresh air install on the inside of the premolded NACA scoops. In order to mount the eyeball vents it is necessary to form a flat mounting surface. This is accomplished by performing a release as described below. Then the eyeball vents are mounted and the NACA scoop closeout installed.

**Step 1**

Release the vent mounting surface for 2 1/4” x 2 1/4” x 1/8”.

**Step 2**

1. Release the vent mounting surface for 2 1/4” x 2 1/4” x 1/8”.

2. Aluminum plate or any flat surfaced material covered with clear tape.

3. Start by drilling a 1.844” (1 27/32”) Hole.

4. Drill the four mounting holes with #10 drill.

5. Fit and bond the NACA scoop closeout, 4021-01/02, to the joggle.

6. Trim the opening to the scribe line after bonding.

Cabin Ventilation

Fig 22:A:1

Nutplates, K1000-08 (8 pcs)

Start by drilling a 1.844” (1 27/32”) Hole.

Drill the four mounting holes with #10 drill.

Eyeball Vent, KEVO110 (2 pcs.)

Machine Screw, MS24693-C46 (8 pcs.)

Aluminum plate or any flat surfaced material covered with clear tape.
B. Cabin Heat*/Cabin Defroster*

Location: We suggest somewhere on the left side for continental installations and somewhere on the right side for Lycoming installations. We suggest you plan the layout of your firewall prior to installing the cabin heat system. The space tends to get used up quickly! Also plan for cable routing etc.

Cabin Heat/Defroster
Fig 22:B:1

Inlet flange, 561 (1 pc.) to baffling with MSC-34 rivets.

3" long piece of 1-1/4" O.D. aluminum potted into avionics shelf with epoxy/flox.

Mount handle in instrument panel.

Cabin Heat Valve Cap, 4933-02 (1 pc.)
Cabin Heat Valve, 4933-01 (1 pc.)

Mount cabin heat valve at the location shown on blueprint 4862. Note that for IO-540 installations, it may be preferable to install the system on the right side. It may also be easier to turn it “upside down” if installed on the right side. See also Detail 2.

Route out 1/8" to 1/4" of core material and fill with epoxy/micro around the hole.

Washer, Flat AN960-10L (3 places)
Nylon, AN963-1032 (3 places)

Form epoxy/flox hard points at the bolt locations.
Mounting Cable On Mixer Valve

Fig 22:B:2

Dimple Locks onto PUSH/PULL cable housing and prevents slipping.

Grind a groove.

End of Plain Screw Driver

Ducting, SCAT 5

VIEW AA

Washer, Flat, AN960-10
Provided with terminal bolt kit.

Locknut AN365-1032A
Use this Locknut instead of checknuts provided with terminal bolt kit (05-16100).

Parts from terminal bolt kit 05-16100
+ One AN 365-1032A Bolt
+ Two AN960-10L Washers
(Check nuts not used)

1/4" "DIE"

Modify AN742D4 Clamp

Clamp, Plain Loop Type AN742D4

Bolt, AN3-3A (1 pc.)
Washer, AN960-10 (1 pc.)
Locknut, AN365-1032A (1 pc.)

Bolt provided with terminal bolt kit 05-16100.