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		Compiled : N. Battye
		Approved : A. Moore

TITLE : Alternate Engine Air Supply

APPLICABILITY : Vans RV6 with Lycoming IO-360 Engines
Mod Type : New Build & Retro-fit

1. Introduction

The purpose of this modification is to provide an Alternative Air Supply to the induction system, following a blockage of the filter.

The alternative air is provided automatically through a sprung loaded door situated on top of the air filter unit.

2. Parts List

2.1 Manufacture and procure the following new parts:

Qty	Part No.	Description	Source
1	xxx	Alternative Air Unit	Self Fabrication-Van's Accessories
AR	Ref Van's Accessories	18g/20g/22g sheet aluminium	Van's Kit
1	N/A	Spring	Ref info note 21
1	N/A	Piano Hinge	Off-cut (Vans Kit)
AR	N/A	3" Dia Scat Tube	Ref Info note 21
AR	Ref Van's Accessories	$\frac{3}{32}$ " x $\frac{1}{8}$ " Solid Rivets	Van's Accessories
		$\frac{3}{32}$ " x $\frac{1}{8}$ " Pop Rivets	

2.2 List of related drawings / photos

Drawing No.	Title / Description	Issue
SM10215-1	Cross Section through new air box upper case	1
SM10215-2	Plan view of new air box upper case	1
SM10215-3	Front view of modified Air Box and Taper Sleeve	1
SM10215-4	Upper Modified Air Intake System 3" 90° Bend	1
SM10215-5	Modified Vans Engine Intake System	1
SM10215-pic1	Alternative Air Box	1

3. Action

3.1 Manufacture 90° bend from glass composite using appropriate epoxy resin & 8oz plain weave as shown on page 4. Wall thickness to be $\frac{1}{8}$ " min.

3.2 Manufacture new air box as shown on page 3.

3.3 Rivet on self-fabricated upper case on to top plate of filter box, as per page 3.

3.4 Introduce and fit 90° bend to injector servo.

3.5 Trial fit lower cowling.

3.6 Position airbox against surface of lower cowling, such that the male taper sleeve on the end of the scat hose locates into the corresponding intake on the new airbox upper

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case. The airbox should be positioned so that the 12" length of scat tube is compressed into approximately 4" long ensuring that the taper sleeve is firmly connected.

- 3.7 When the above condition is satisfied, record the position of the airbox. Remove the cowling and permanently bond the airbox to the lower cowling with appropriate epoxy adhesive, use wet lay-up fibreglass to join the filter inlet to the cowl duct.
- 3.8 Fit up the lower cowling. The male taper fitting should locate firmly into the airbox. This can be checked by reaching through the opening where the exhaust pipe exits the cowl.
- 3.9 Inspector to inspect and verify conformity & workmanship.

4. Flight Test and Special Inspections

- 4.1 Carry out an extended ground run to establish that the spring rate is satisfactory to hold the door shut under normal operation conditions, and allow it to open when the normal intake is blocked.
- 4.2 Conduct an air test to confirm that the installation makes no difference to the normal operation of the aircraft including engine temperatures. This air test to be authorised under a PMR by LAA Inspector.
- 4.3 Inspect the installation for security after first flight and periodically thereafter.

5. Weight and Balance

- 5.1 To be included in initial weight and balance schedule.
- 5.2 For retro-fits, weight & balance to be amended either by re-weighing aircraft, or by weighing the added/subtracted components and making a change by calculation.

6. Certification

- 6.1 Appropriate logbook entry to be made by approved LAA inspector prior to test flight
- 6.2 Appropriate completion statement to be included in aircraft logbook once aircraft has satisfied the air test requirement.



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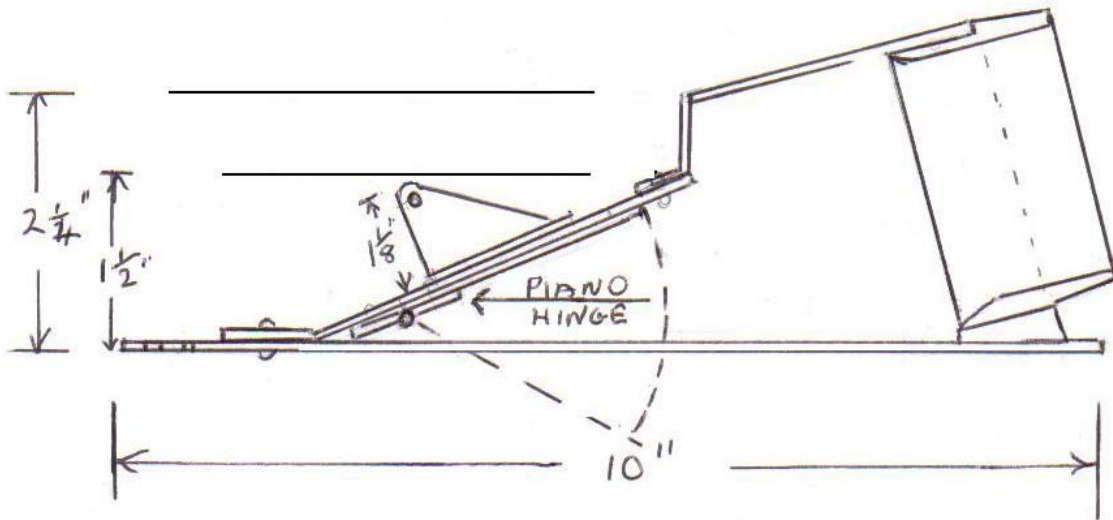
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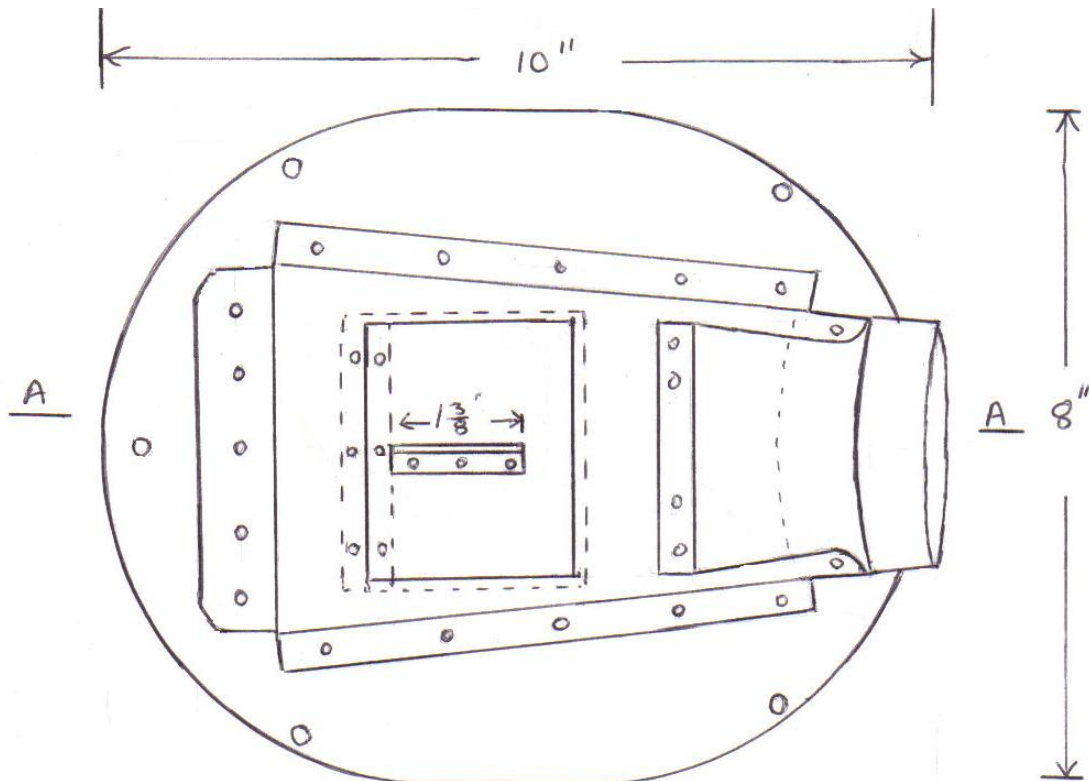
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Cross Section (A-A) through new air box upper case



Plan of new air box upper case





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Issue 1

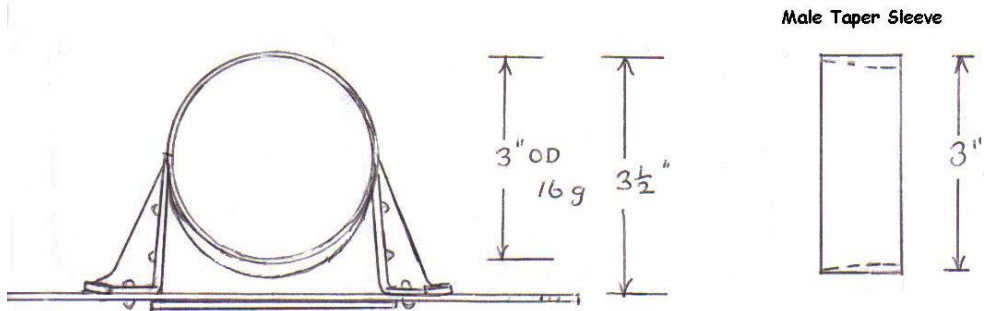
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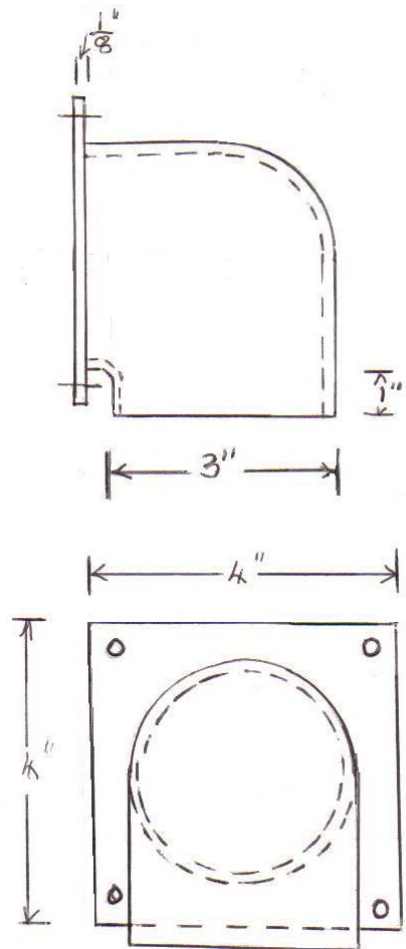
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Front view of modified Air Box and Taper Sleeve



Air Intake System 3" 90° Bend





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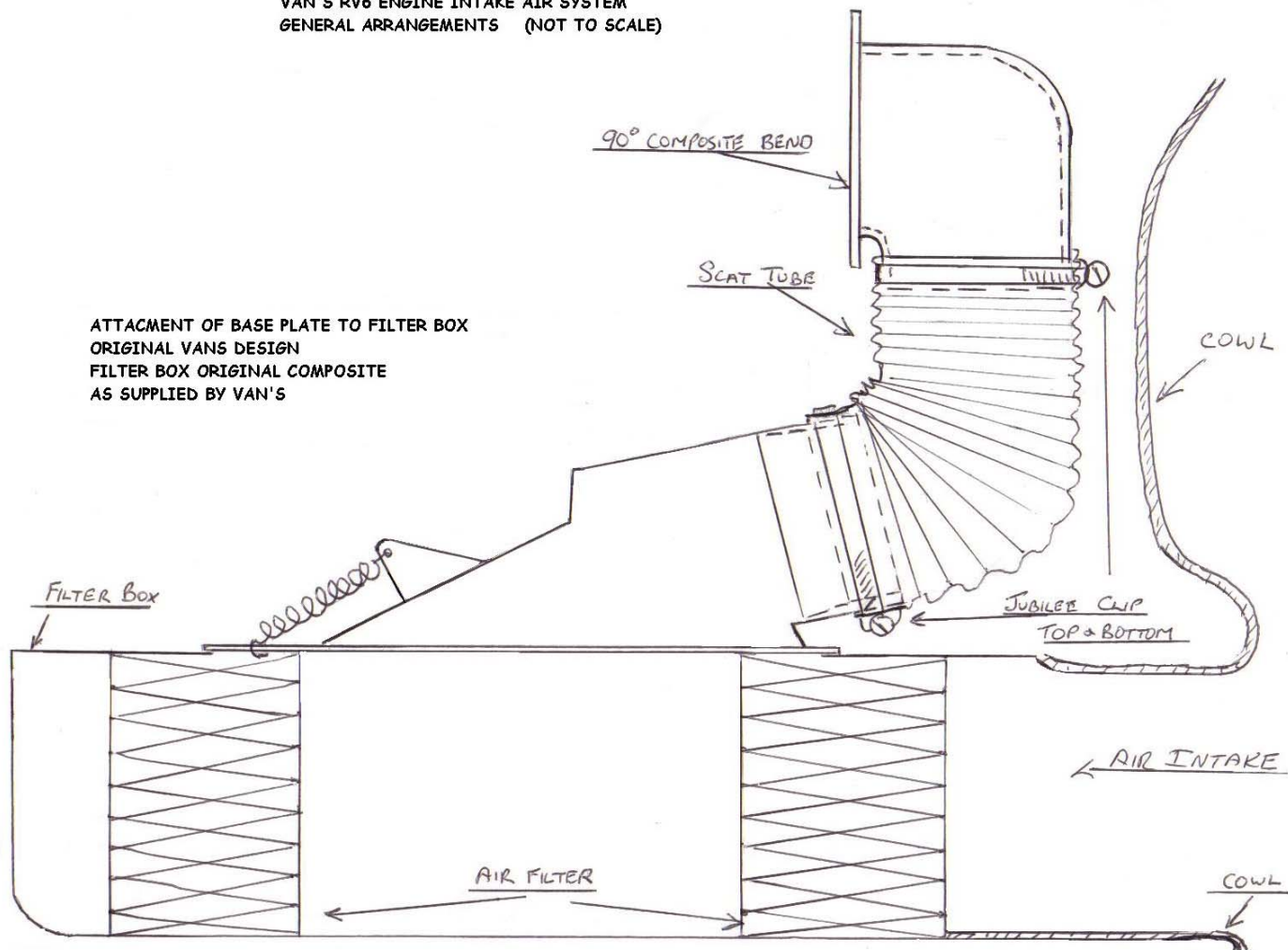
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SM10215-4 Modified Vans Engine Intake System

VAN'S RV6 ENGINE INTAKE AIR SYSTEM
GENERAL ARRANGEMENTS (NOT TO SCALE)



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SM10215-pic1 Alternative Air Box

