Service Instruction ENGINE COMPONENTS, INC.	S.I. No.: **04-7** Page: **1 of 3**
Title: **CONTINUING AIRWORTHINESS FOR ECI INTERCYLINDER COOLING BAFFLES** *Technical Portions are FAA DER Approved.*	Issued: **02/28/05** Revision: **1**

1.0 **PURPOSE:** This service instruction provides continuing airworthiness data for the AEL75339 and AEL72569 baffles.

2.0 **MODELS AFFECTED:** Lycoming 320, 360, and 540 engines as defined in PMA supplements for the above parts.

3.0 **TIME OF COMPLIANCE:** Whenever AEL75339 or AEL72569 baffles are installed onto an engine.

4.0 **DISCUSSION:**

Proper cooling and properly directed cooling air is critical to the longevity of aircraft engines. As a rule of thumb, Lycoming Engine Installation Manual specifies for 320 engines and for 360 engines a pressure drop of $5^1/_2$ and $6^1/_2$ inches of water across the engine, respectively. However, few factory built engines achieve this level of cooling. As a rule of thumb, a pressure drop $4^1/_2$ to 5 inches of water during climb provides adequate cooling to ensure reliable performance to TBO.

To ensure this level of air cooling, it is important to keep intercylinder cooling baffles in good condition and fitted well to the engine on which they are installed. In the paragraphs below, ECi recommends inspection criteria, repair techniques, and fitting instructions as necessary to promote this.

5.0 **INSPECTION CRITERIA:**

At annual inspection, one should thoroughly inspect baffles for corrosion and wear due to rubbing on the cylinder head and barrel. Typically, baffles will last for many hours of operation if they are installed properly. However, excessive wear is evident by grooves puncturing the baffle such as shown in Figure 1. If the baffle shows corrosion or excessive signs of wear, it should be replaced.

Also, the spring AEL71611 should be capable of pulling the baffle tight against the barrel fins within $^1/_8$ inch gap. If the spring has lost tension, it should be replaced.

6.0 **REPAIR TECHNIQUES:**

If the FAA has authorized repairs by issuing a repair station certificate or otherwise authorized by the FAA, ECi baffles may be repaired using industry practice as identified in Advisory Circular 43.13-1B. ECi baffles are fabricated using 6061-T4 material (thickness .032) and MS20470AD-4-4 (or equivalent) rivets. ECi cannot support baffles that have been repaired or otherwise modified beyond the limits of the original design.

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7.0 INSTALLATION ELIGIBILITY:

Part Name	Part Number	Approved Replacement For Lycoming Part Number	Model Eligibility
Baffle Assy, Intercylinder Cooling	AEL72569	72569	O-320-no suffix, A1A, A1B, A2A, A2B, A2C, A2D, A3A, A3B, A3C, B1A, B1B, B2A, B2B, B2C, B2D, B2E, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C2C, C3A, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H, H1A, H1BD, H2AD, H2BD, H3AD, H3BD IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, C1A, C1B, C1F, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B, F1A AIO-320-A1A, A1B, A2A, A2B, B1B, C1B LIO-320-B1A, C1A AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B
Baffle Assy, Intercylinder Cooling	AEL75339	75339	O-360-A1A, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1LD, A1P, A2A, A2D, A2E, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4K, A4M, A4N, A4P, A5AD, B1A, B1B, B2A, B2B, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D1A, D2A, D2B, E1A6D, F1A6, G1A6 HO-360-A1A, B1A, B1B, C1A IO-360-B1A, B1B, B1C, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, F1A, L2A, M1A LO-360-A1G6D, A1H6, E1A6D TO-360-E1A6D HIO-360-B1A, B1B LTO-360-E1A6D AEIO-360-B1B, B1D, B1E, B1F, B1F6, B1G6, B2F, B2F6, B4A, H1A, H1B O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B4A5, B4B5, D1A5, E4A5, E4B5, E4C5, G1A5, G2A5, H1A5, H1A5D, H1B5D, H2A5, H2A5D, H2B5D IO-540-C1B5, C1C5, C2C, C4B5, C4C5, C4D5, C4D5D, D4A5, D4B5, D4C5, J4A5, N1A5, R1A5, T4A5D, T4B5, T4B5D, T4C5D TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AF1B, AG1A AEIO-540-D4A5, D4B5

Figure 1: Lycoming baffle showing excessive signs of wear