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Jabiru 6 Cylinder Engine Muffler – Tractor Installations				

SERVICE BULLETIN: JSB 005-1

Issue: 1
Date: 13th Oct 2004
Subject: Jabiru 6 Cylinder Engine Muffler

1. Applicability:

All Jabiru 6 cylinder engines fitted with a Jabiru Muffler.

2. Background:

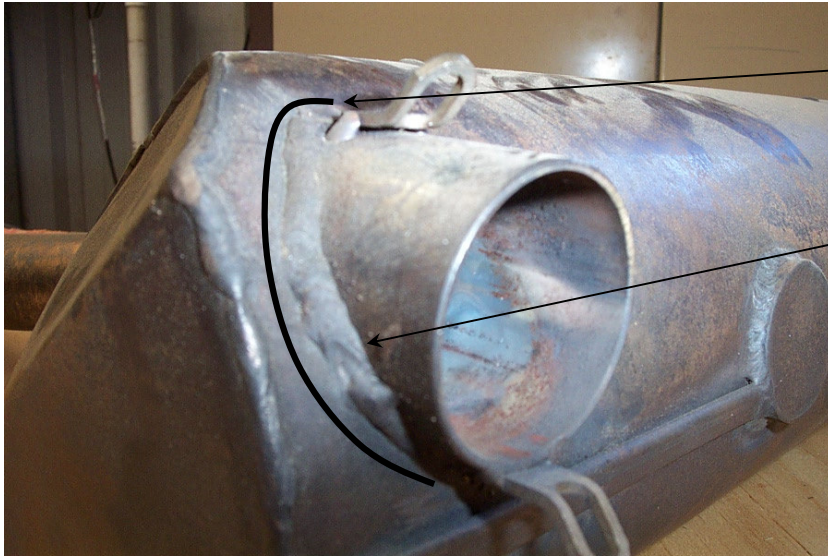
Some mufflers fitted to Jabiru 6 cylinder engines in tractor configured aircraft have recently failed due to the inlet socket cracking and breaking free of the muffler body. When a failure of this type occurs the muffler body falls away from the exhaust manifold and drops down onto the lower cowl, but it does not fall away from the aircraft. The failures were traced to mufflers which had had their inlet pipes welded in using a MIG welder in place of the TIG welder that is normally used. Refer to the figures below for pictures of a MIG-welded stub and a TIG-welded part.



Stub broken away from muffler body, including the spring loop.

Figure 1. Typical Muffler Failure.

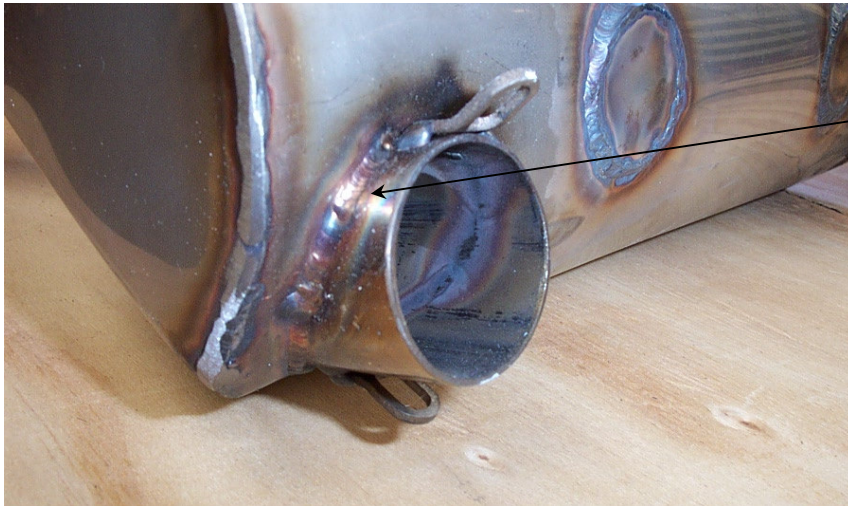
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Cracking occurs around the outside of the weld bead, in the body of the muffler.

MIG Weld. Note that weld bead is convex, with “beach marks” spaced further apart. Ref Figure below.

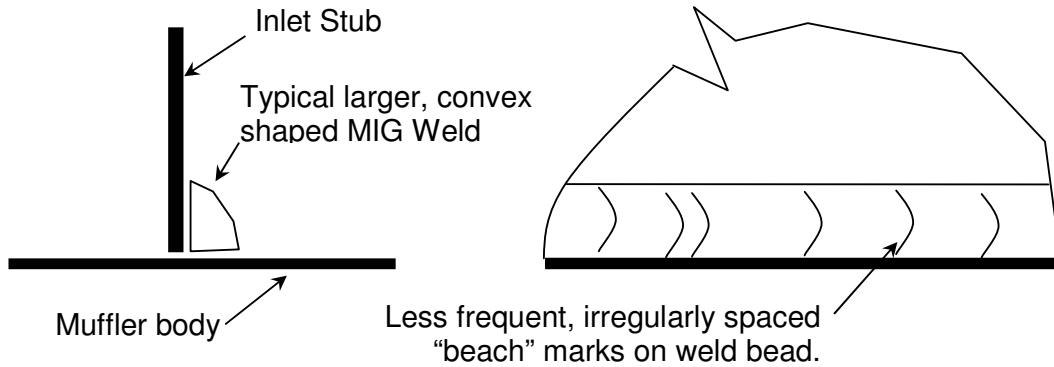
Figure 2. Example MIG-Welded Inlet Stub



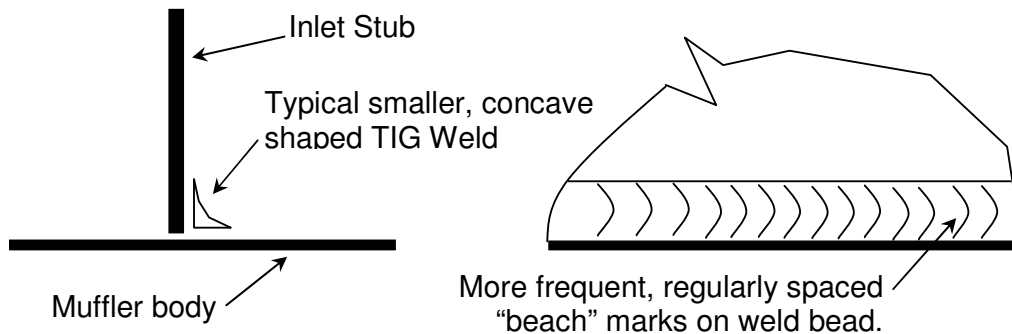
TIG Weld. Note that weld bead is smaller, concave, with “beach marks” spaced more closely. Ref Figure below.

Figure 3. Example TIG-Welded Inlet Stub

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Typical MIG Weld Features



Typical TIG Weld Features

Figure 4. Typical Features of MIG and TIG Welds

3. Recommendations:

Visually inspect the muffler as soon as possible. Check for cracks in the areas indicated and determine if the welds are MIG or TIG type (if the owner is in doubt, a qualified welder will be able to tell which process was used). If any cracks are found they should be repaired using a TIG welder before further flight. If no cracking is found and the welds are TIG type, the aircraft can be continued to be flown as normal, with normal scheduled inspections of the exhaust system every 50 hours as described in the maintenance manual.

If no cracking is found but the welds are MIG type, the aircraft may continue to be flown, but the muffler should be inspected for cracks at 5 hour intervals until the muffler is repaired. To repair MIG welded mufflers, the MIG bead should be ground back to allow room for a TIG weld bead around the perimeter of the existing MIG weld. The TIG welding should then be carried out by a qualified TIG welder.

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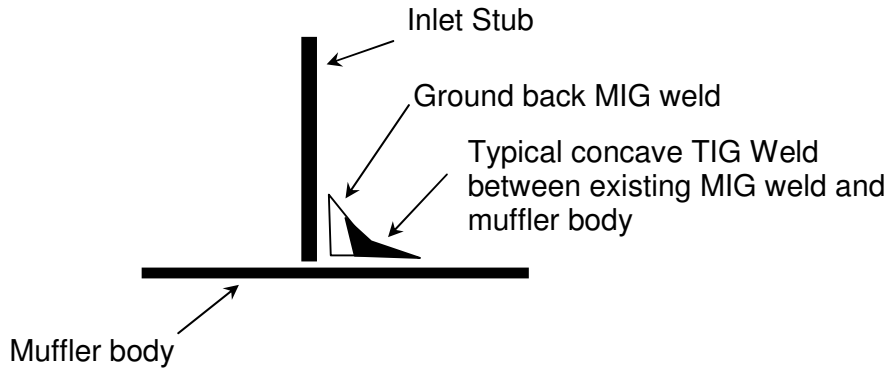


Figure 5. MIG Weld Re-Work

Once the repair has been carried out, the aircraft may return to normal maintenance schedules of an inspection of the exhaust system every 50 hours, as required by the maintenance manual.