ModTiger Engineering llc

TECHNICAL TIPS

ON THE SUNBEAM TIGER

December 2007

Crossmember Inspection

Here's a short tip on what to look for when doing your undercarriage inspection while you change the oil. The Tiger crossmembers are all at least 40 years old and many of them have begun to show signs of the wear and tear of life on the road. These shots were taken of a Tiger recently purchased by a local member.

Figure 1. Here's a tell tale clue that this crossmember has seen previous repaire in it's service life. The arrow shows the bead of weld that someone has placed over a former crack in the shell. You will also note in these photos that the entire perimeter of the spacer plates have been welded to the shell.

Figure 2. On the opposite front pad, a little wire brushing reveals a new crack starting to propagate. This is a significant and dangerous sign and should not be ignored.

Welding the perimeter of the spacer pads is a practice I strongly disagree with and the next shot will pretty much tell you why. The extra weld creates a "heat affected zone next to the weld bead and this is leads to an increase of stress at this location.

Figure 3. There's a lot of information in this photograph when you know how to interpret it. The two pairs of black arrows show the "new" crack propagation. The double headed arrow shows that portion of the crack that had previously fractured and propigated during service until it was well beyond the spacer pad. Note that the "old" fracture precisely follows the edge of the weld bead. That is typical. The ultimate cause of the dislocation shown was an accidental impact with a curb, but the structural failure was simply waiting to happen. The more these cracks propagate, the less energy it takes to open them up and cause a potential accident.

These pictures are intended to encourage you to have a detailed look at your suspension, to prevent problems before they occur. This crossmember is non-repairable in my estimation and this Tiger will be receiving one of my Alpine conversion crossmembers to get it back on the road. Tom Hall