

A HOLE IN ONE

Written by W. W. Hill

In the November 1942, the 91st Bomb Group began flying WWII bombing missions attacking targets in Europe. Battle damages and losses of our 91st Bomb Group B-17 bombers by Nazi flak and aircraft attack were very high. As a result there was always some one on the maintenance crew's ass to repair our damaged bombers to flying status as soon as possible so they would be ready for the next days missions. The word was "HOW SOON," and the response better be "tomorrow morning, or damn soon."

After one such mission a 323rd Bomb Sq (OR), B-17 received a few hits which were rapidly repaired. One shot in the nacelle appeared to be easy to repair. However, on a closer look there was damage to one of the four brackets used to attach the No. 2 engine to the wing had been hit, and required major work. The Squadron Engineering Officer came up with the usual "How Soon" question. There were no spare engine mount brackets available. Our 323rd Bomb Squadron Sheet Metal Crew was on the spot. We studied the damage and pointed out that we could duplicate the bracket, if we had the right annealed aluminum sheet metal of the same thickness (.052 or .064 thousands) as the damaged bracket. It would of course be necessary to heat treat and harden the annealed new bracket after it was formed. Hardened thick aluminum usually cracks when bent sharply. Heat treating the soft annealed bracket could be accomplished in the base central heating furnaces that provided hot water heat to the barracks and buildings.

It was a fix it or let the plane sit situation. Originally the Squadrons were assigned nine B-17 each. No spares! Losses at that time were mounting. The Group needed every B-17 that could fly. Our option was to try making the bracket, and get the plane back on flying status or watch it sit until a part was located back in the States. After discussing the job and the possibility of us making a bracket, Harold "Bumps" Elliott and I were given the go ahead to attempt the repair. The next question was HOW SOON? Damn soon!

We carefully removed the damaged engine mount bracket. Then using the soft annealed aluminum sheet metal supplied by the RAF maintenance who were still on the base, we made two models, and checked them for fit. We were ready for the Bassingbourn Central Heating Plant, where we coated the brackets and test strips with the yellow lye soap, "Grand Mother's Lye Soap." We were amazed in the tests how hard the metal became, and how the strips would "sing" when struck. Finally we placed the soaped up bracket on one of the long coal shovels, eased it into a hot furnace, and alertly watched the lye soap color. In time the soap coating turned brown. Quickly we removed the shovel and bracket from the furnace, and let them cool naturally on the floor. When cool, we washed off the soap.

We then fitted the bracket on to the engine mount, scribed the rivet holes, center punched and drilled out the holes, fitted the bracket in place, inserted and bucked the rivets, and voila', the job was finished.

It should be noted that when hardening iron or steel, the material is generally heated to cherry red, and then immersed into cold water or oil. Heat treating aluminum is just the opposite. Cooling the aluminum slowly hardens it, and while quenching it in cool water softens it. The job done, Carl Proctor, the Crew Chief, taxied the plane from the hanger to the Wimpole Hall dispersal area, and made ready for the next day's mission. We, the crew chief and I, kept tabs on the status of the bracket after each mission. No cracks or failures were ever observed. The plane was eventually shot down on a mission.

The central heating of Bassingbourn incidentally was why Bassingbourn Air Base, Royston, was called the "Country Club." Built just before the war, it was the show place of the RAF. It had central heated buildings except for the Hangers. The barracks had hot and cold running water in the bath tubs and showers. To brighten the Officer's club, the 441st Sub Depot built a glass brick and stainless steel bar; then motorized the dentist drill, and spun and installed an aluminum spittoon for the dental chair.

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