

Under The Bonnet

Newsletter of the

**Wasatch Mountain
Jaguar Register**

February 2011



WMJR on the web:

www.cs.utah.edu/~gary/WMJR/

Tech Session January 29 Meadow Brook Restorations

Ed. Note: this report is courtesy of Drew Frink, BMCU webmaster.

Our tour of Dewayne Ashmead's Meadowbrook Restorations was, as always, a great time. Mr. Ashmead has assembled a very interesting collection of vehicles according to his own personal tastes.

As in past visits he was able to tell us some interesting facts about each of the cars, which adds a bit more to the experi-



ence of the tour. Over the 5 or so years since we first visited we've been able to see a couple of his projects (particularly the Kurtis roadster, Auburn, and Glasspar) come to completion.

We had good attendance, but no one (as far as I know) made any sort of note of who was present. I did see one Austin Healey 3000, a Mini, MGB, Jaguar, and Model A out in the parking lot, so at least a few of us braved the inversion to exercise the old metal. A good start to the new year.

Member Profile: Mike and Susie Cady

This month's member spotlight is Mike and Susie Cady.

Mike was born in Mason City, Iowa on February 1, 1943. He attended Mason City High School and North Iowa Area Community College.

Mike then joined the Air Force in 1964 and served in Southeast Asia for 18 months. After his tour of duty he was transferred to Hill Air Force Base, Utah.

Mike was honorably discharged from the Air Force in November 1968. He then went to work for the Union Pacific Railroad as a Loss and Damage inspector at Clearfield, Freeport Center from 1968 to 1972. In July 1972 Mike joined the Utah Highway Patrol and worked as a Trooper for 26 years, retiring in 1998.

Upon retiring from the Highway Patrol, Mike then went to work for the Utah Drivers License for 12 years, retiring in February 2010. Mike is also a certified Emergency Vehicle Operation (EVO) Instructor and has been training law enforcement recruits for the past 20 years.

Mike bought his first and only Jaguar, a 1954 XK-120 Sport Coupe, in February of 1963 for \$1,587.00 from the second owner. In the winter of 1966, Mike drove his XK-120 from Iowa to Utah. Mike said that the winter of 1966 was one of the coldest winters on records. At that time there was no Interstate so he had to drive on secondary roads.



When he got to Colorado he caught US 40 and drove across the Rocky Mountains and Wasatch Mountains to Salt Lake City. The car handled extremely well on the snow and ice covered roads, however it was so cold that frost formed on the inside of the windshield.

Mike has been involved with restoration on the XK-120 in one form or another for the past 47 years. Over the years Mike and Susie have shown the XK-120 in numerous car shows, Concours and Western States events. Susie can vouch for this as she has to dust all of the trophy's. Mike enjoys working on his and Susie's cars, keeping them in top notch condition at all times.

Mike joined Wasatch Mountain Jaguar Register (WMJR) in the late 1970's, recruited by Ken Borg and Duane Allred.

Susie Cady was born in Logan, Utah on March 12, 1947. She graduated from Ben Lomond High School in May 1965. In January 1966 she went to work at Hill Air

Force Base, Utah, where she worked until she recently retired in December 2010. Susie has also had an interest in cars ever since she was young. Her parents had a 1964 Ford Galaxy XL that was turquoise and had bucket seats. She thought that car was totally awesome and always wanted to drive it, but never was able to talk her parents into it.

When she got out of high school and went to work at Hill AFB, she knew she would need a car. Her first car was a 1965 Chevy Corvair Monza white with bright red interior. The Monza had a stick shift which Susie had never driven, so her father had to take her out and give her some quick lessons.

However, the Corvair Monza did not last long, as Susie fell in love with a brand new, bright red, 1966 Chevelle Malibu. Needless to say she bought it right off the showroom floor. Susie had several other cars over the years. Here most favorite being her 1993 bright yellow Mustang 5.0 convertible which she also bought brand new off the showroom floor. Susie still has her yellow Mustang which she calls Big Bird.

Mike and Susie were married in October 1994. Together they have 5 children and 11 grandchildren and live in Roy, Utah. They love to travel and have made two trips to England. They also love to attend car shows, go camping and spend time with their family and friends.

Whitworth, Nuffield, BSF and British Association Fasteners Essentials for a Britmobile Owner of a Certain Age ...

-- Gary Lindstrom and Bill Van Moorhem

Reprinted from the August and September 2004 BMCU Newsletters

You see a great buy on Whitworth taps and dies on Ebay and you say to yourself "These sure would be handy to clean up the threads on my MGtriumphMorganAustinHealeyJaguar project car!"

Wrong! Even though Whitworth *wrenches* are essential for work on most pre-1960 British cars, there is nary a Whitworth *thread* to be found on these vehicles. And maybe your most handy wrenches are actually labeled BS rather than WW, and have different size designations? What gives? Well, the answers have enough historical twists and turns to fill a Miss Marple mystery.

There is so much consternation on

this subject that we will endeavor to enlighten the BMCU Assembled Multitudes with this All Purpose (Brief) Guide to British Fasteners on such vintage vehicles. So, pull up your creepers and let's get to work.

Part 1: Whitworth vs. BSF

The Whitworth thread form (BSW, or WW) was proposed by Sir Joseph Whitworth in 1841, and adopted as the British industry standard a few years later. This was supplemented in the early 1900's by British Standard Fine (BSF) threads, which are finer (and have a different thread angle, but that's not important here). Thus the Brits had

both coarse (Whitworth) and fine (BSF) thread bolts. Fine thread bolts are stronger than course thread since less metal is removed in making the threads.

As stated above, there are no (although there may be one out there somewhere) Whitworth threads on our cars -- only BSF -- but with Whitworth sized bolt heads, and hence wrench sizes. The most commonly seen threads are 1/4 x 26 threads per inch (TPI) BS, 5/16 x 22 BS, 3/8 x 20 BS, 7/16 x 18 BS, 1/2 x 16 BS, and 9/16 x 16 BS. BS wrenches come in the these sizes, labeled by nominal (outside) bolt diameter. Hence for the bolt sizes listed above, we use BS wrenches

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labeled 1/4, 5/16, 3/8, 7/16, 1/2, and 9/16 inch, respectively.

Whitworth wrenches are the same sizes, but labeled one size smaller. Hence the Whitworth wrenches for the bolts listed above are respectively 3/16 BSW, 1/4 BSW, 5/16 BSW, 3/8 BSW, 7/16 BSW and 1/2 BSW.

Where are these used? Essentially, everywhere on a 1950's and earlier car -- but not on MG engine blocks -- as we shall see later.

Part 2: British Pipe Threads

The Brits, of course, used different dimensions and TPI for their pipe threads too. Pipe threaded fittings are not common on B-Cars but do occur, for example on the heater valve on

Spridgets. For example, both the Brits and the U.S. have what is called 1/8" pipe. The British Standard 1/8" pipe has an outside diameter of 0.383" and has 28 TPI. In the U.S. 1/8" pipe is 0.405" in diameter and has 27 TPI. The same thing happens for 1/4" pipe, where the British standard is 0.518" and 19 TPI, while the U.S. standard is 0.540" and 18 TPI. Since pipe threads are tapered, the diameter at the beginning of the thread is less than at the end, a U.S. male thread will likely start into female British fitting, but since the TPI are different, the two will likely bind up before they seal. Everyone we know that has tried to mate U.S. and British pipe threads has generated a slow but consistent leak.

Part 3: BA Machine Screws

BA is short for British Association Form -- originally developed by the Swiss for very small watch and clock screws. BA sizes range from 0BA (larger) to 16BA (smaller), though 2, 4 and 6BA seem to be all that appear in British cars. Beware: the diameters and thread counts are deviously close to common sizes, e.g. a 2BA has the diameter extremely close to that of a #10 machine screw, but -- believe it or not -- a thread count of 31.4 TPI rather than 32! The result is that some BA screws are almost, but not quite, interchangeable with screws obtained from your local hardware store.

BA screws are used in instruments (e.g., Smith and Jaeger), on carb throttle and enrichment stops, and certain body trim parts.



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Part 4: Lord Nuffield's Mad Metric Form

Now the plot really thickens. There is no official name for this thread form, which appears on Mowog (Morris Wolseley Garages, e.g., MG) engines and gearboxes. The story goes that MG engines and gearboxes were made in a factory originally set up by Hotchkiss, a French munitions company. The tooling was all metric, but the workers all had Whitworth wrenches. The result was international detente in the form of metric threads on bolts with Whitworth heads. Fortunately, only one thread size really matters to us: 8 x 1 mm -- which, being a French size, is different from the more common 8 x 1.25 mm size. There seems to be no rational scheme for wrench sizes here, but 3/16 BSW and 1/4 BSW seem to

cover all the bases.

Part 5: Recommended tools

The following table is our recommendation for the Whitworth sizes that are needed by a 1950's and earlier British car owner:

3/16 WW, also known as 1/4 BSF, 1/4 WW (5/16 BSF), 5/16 WW (3/8 BSF), 3/8 WW (7/16 BSF), 7/16 WW (1/2 BSF), 1/2 WW (9/16 BSF)

For taps and dies, the most useful are 1/4 x 26 BSF and 5/16 x 22 BSF, plus 6BA, 4BA, and 2BA, as well as 8 x 1 mm.

Two other items that are extremely handy are screwdrivers: a hollow ground "gun smith" screwdriver for turning those fiendishly narrow and

shallow slots on Lucas terminals, and a Reed Prince screw driver -- akin to a Phillips, but less pointy -- fitting those cross headed screws with radial marks between the cross arms, and where the normal Phillips screwdriver always slips.

Part 6: Resources

To read up on this "fastenating" story, try the following references:

- 1) "Bolts and Nuts MG Style," The Sacred Octagon, June 1980, pp. 138-9
- 2) "The #%@! Wrench Won't Fit!," by "wkv", BMCU Newsletter, June 1990, pp. 3-4, and
- 3) "Whitworth Sockets & Wrenches", on the British Tool Company website, www.britishtool.com.

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ers include:

1) Moss Motors and Abingdon Spares -- well known to MG owners

2) British Tool Company, mentioned above, and
3) British Tools and Fasteners, <http://www.britishfasteners.com/>.

And oh yes, British tools do show up from time to time on Ebay! Just stay away from those BSW taps and dies.

Event Calendar

Saturday March 19, 2011
Dinner Social
TBA

Saturday May 21, 2011
Dinner Social with Drive
TBA

July / August
Car Show with [Bonneville Austin-Healey Club](#)

Saturday August 13, 2011
Lunch and Drive to Antelope Island
[A Little Taste of Britain](#), Layton

Saturday August 27, 2011
[Utah Concours](#)
Thanksgiving Point

Saturday September 17 2011
Dinner Social at the Cady's
802-731-1599, cadysue1599@msn.com

Saturday October 29, 2011
Hallowe'en Party
J and Kay Jennings, 801-274-2671

November
Planning Meeting
Selection of New Officers
TBA

Club Officers

Co-Presidents
Susan Cady, 801-731-1599
cadysue1599@msn.com
Liz Green, 801-451-5776
carousell2@msn.com

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Newsletter Publisher / Webmaster
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