

12. Miller's Wagon

In this piece, our Collections Care Manager Fred van de Geer, explores four distinct physical phases in the life story of a vehicle now held by the Museum: manufacturing, use, redundancy, and preservation. This iconic covered wagon will be familiar to many of those who have visited the Museum over the last 70 years and, thanks to the dedication and attention to detail of a skilled conservator such as Fred, it can look forward to many, many more.

Meadcroft of Welwyn et. al., Miller's wagon, circa 1880



The wagon, much as it is today. It can be seen in the Museum's Wagon Walk gallery (MERL 51/1295)

The Four Phases of the Miller's Wagon

In the year of its inception, The MERL must have been a busy place, with daily offers of donations dropping onto the Keeper's desk. It was still a world dominated by the wireless, rather than television. There were no programmes like the Antique Road Show or Cash in the Attic to put a monetary value on objects. In fact, the topic of this article—the miller's wagon—was more than likely heading for a bonfire or a scrapheap, like so many others at the time. It had no monetary or practical worth,

yet it had historical value. Much to the owner's credit it was offered to the Museum and that is where it started the fourth part of its life.

All objects deteriorate at different rates, influenced by a range of circumstances. It is possible to make an educated guess as to how the wagon came to be in the condition you can find it in today. Most objects go through four distinct phases, the first being manufacturing. The wagon was made around 1880 by Meadcroft of Welwyn, having been ordered by Benjamin Cole of Codicote Mill near Harpenden. Used to transport sacks of grain and flour, the construction of the wagon needed to be sturdy, capable of carrying heavy loads, and most importantly, under a cover.



Detailed image taken during conservation showing the side panels and iron straps, and the relatively light construction of the vehicle (MERL 51/1295).

The materials used to make the vehicle were largely like those of the other wagons. Namely a timber floor and sides with iron straps, wooden spoked wheels, and iron tyres. Different was the use of metal axles, instead of the more common timber ones, and the leaf springs between the axles and the body. The wagon was painted yellow, black, and red. A red lead undercoat would have been applied, on top of which one or two lead-based topcoats were added for protection. A deciding factor in the early preservation of the wagon would have been *when* these coatings were applied. If the wagon was built during a wet season, the bare timber would have absorbed much moisture from the air. The timber used may not have been dried properly and could still have been quite 'green'. Sealing in that moisture with paint, may have resulted in bad adherence of the layers. The moisture would need to escape in warmer, dryer days, resulting in blistering and cracking, and ultimately flaking off. The canvas cover or tilt, made by Peddar of Luton, was fixed over a relatively light willow frame with centre-parting curtains at the front and back. To make the canvas watertight, it was also painted, which made it far heavier and less flexible. Because the tilt was larger than the wagon, it not only protected Mr Cole's produce, but also the wagon itself.



This is a 1950s record photograph of the wagon, as taken after it came to the Museum (MERL 60/200).

The second phase an object goes through is the period of intended use. The wagon would have been an essential tool in the miller's undertakings and no doubt subject to frequent maintenance. The springs would make the ride more comfortable and also prevented the heavy loads from damaging the wagon. Many of the other wagons in The MERL collection carried hay or crops in from the fields, which amounted to bulky yet relatively light loads. In these instances, the bounce of the load would prevent damage to the wagon, and springs on these other vehicles were not necessary. Inevitably, the need to replace the wagon with a more economical motorized alternative would have made it no longer useful.



Detailed conservation image showing decorated side panel, springs, and rear axle. Note the strap on timber above the spring; this acts as a stop to limit travel and thus prevent breakage of springs (MERL 51/1295).

Enter the third phase, that of redundancy. It is often during this phase that a future museum object suffers the most damage. Indeed, if the owner no longer has any use for it, maintenance is often limited, and safe and protected storage not always an option. Even when the object has mercifully been stored in a shed, the environmental conditions are often far from ideal. Over the years, dust will accumulate on the flat surfaces and this holds moisture, accelerating deterioration. If the conditions are ‘favourably damp’, woodboring beetles might wreak havoc. Luckily in the case of the miller’s wagon, the son of the original owner, ensured it was kept protected and when it was offered to the museum in 1951, it was described to be a ‘beautiful wagon in excellent condition’. A price of £5 was paid (approximately £160 in today’s money).



This mid-twentieth century photograph shows a different wagon that has been left for scrap. It shows how lucky we are that the miller’s wagon had been so well-cared for (MERL 35/4522).

The fourth phase—that of preservation—started when the wagon was delivered to Reading and was allocated a unique identifying ‘accession number’: 51/1295. From day one, The MERL had the foresight to employ a person dedicated to the care of the collections. This was (and is) not always a common or definite inclusion in a Museum’s workforce but shows that, in the 1950s, these collections were valued not only for their value to academic research but as a form of tangible heritage worthy of preservation. Through the decades, skilled technicians maintained the exhibits to the best of their abilities. However, the preservation world evolved and transformed from traditionally-skilled technicians into a dedicated conservation profession. As is common practice to this day, any treatment carried out on a Museum object was recorded. In the past these reports found their way into the individual ‘accession file’—an archive folder containing all the documentation and correspondence associated with the item in question. Nowadays treatment is recorded direct onto the Museum’s database.

In terms of collections care, the wagon was worked on in 1970 and reports from the time list the following treatment: *washed and treated with Rentokil. Wooden panels treated with three coats of soluble Nylon. Metalwork coated with deoxidine and 'Cranco'. The tilt was washed, the loose hessian stuck with Copydex.*

These treatments were the best available option at the time. However, it is worth considering all these materials fifty years later. Legislation has rightly reduced the chemical range of insecticides. Methyl Bromide, DDT, and Naphthalene are all banned as available insecticides. Insect activity in collections is now prevented via control of the environment. If the humidity is kept at a relatively constant and low level, then insects won't thrive. Deoxidine is still available and contains phosphoric acid. The advantage of this acid lies in its ability to turn active corrosion into a passive coating. However, the use of the liquid Deoxidine is indiscriminate and reduces a metal surface into a rough and dull appearance. Cranco was a Nitro Cellulose coating made by the Frederick Crane Chemical Company from Birmingham. In effect the metal was coated with a clear lacquer. Nowadays conservators would use a micro-crystalline wax as this is a reversible treatment and thus controllable. Soluble Nylon is equally irreversible and doesn't age well. The solution, which contains formaldehyde and is alcohol-based, was applied to consolidate friable surfaces. Most of The MERL's wagons were treated with this material and it can sometimes be detected as a milky white film. It also discoloured the painted surfaces. The use of Copydex to repair the torn canvas tilt did not prove to be a long-term solution. Copydex consists of mildly acidic latex rubber as well as ammonia, which allows the rubber to bond to all kinds of surfaces.

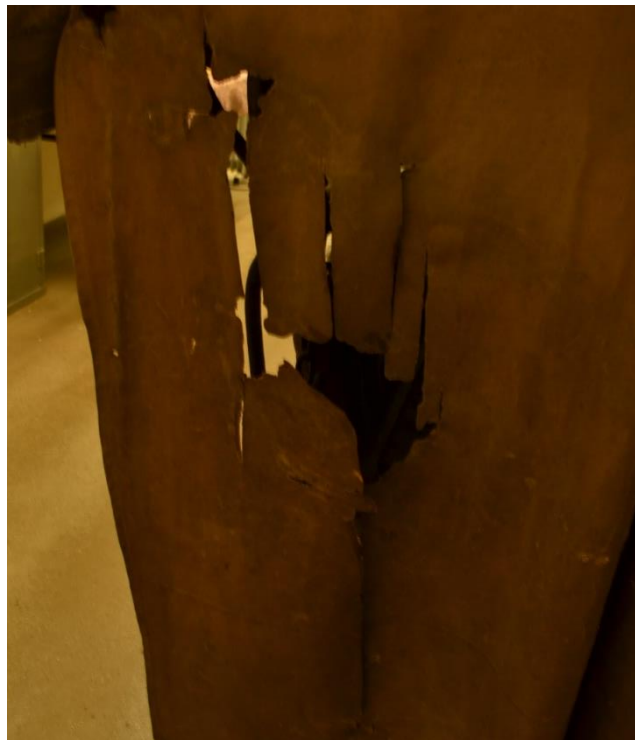


The wagon, wheels temporarily removed, to lower it to fit in the conservation studio (MERL 51/1295).

As part of The MERL's *Our Country Lives* redevelopment and redisplay project (2013-2016), the miller's wagon was brought into the conservation studio for much-needed treatment. This was a mixture of good news and bad news. The canvas tilt and the wheels were particular causes for concern. To bring the very tall wagon into the studio, all four wheels had to be removed. A great discovery was the date stamp and the maker's name on the axle: 'Stenning // Euston Road // 1876'. Many accidents were caused by inferior axles and axle stubs, resulting in legislation for manufacturers of axles to stamp them with a date and makers name.



Good news: careful inspection when the wheels were temporarily removed revealed a maker's name and address and a date of manufacture stamped on the axle. (MERL 51/1295).



Bad news: a full assessment showed some damage, such as this tear to the canvas tilt, which needed careful and considered conservation (MERL 51/1295).

As a whole, The MERL wagon holdings had suffered from severe fluctuations in humidity, leading to loose joints in the woodwork, especially the wheels. As the wheels carry the weight, it is essential that they remain as strong as originally intended. On careful inspection it was found that the miller's wagon had suffered similarly. The shrinkage gaps were covered with brown polymer clay. The wheel was placed (clay-covered side down) on trestles and the gaps filled with a clear casting epoxy resin. Once filled, the wheel was turned over again and the clay removed. The fill was colour-matched with acrylic paint. Though not easily reversible, this method gives strength and stability, whilst retaining all the original materials.



Left: repairs to tears in the canvas tilt underway, using calico and a Perspex clamping system. Right: canvas tilt repairs completed and colour-matched ready for redisplay (MERL 51/1295).

The *Copydex* repairs on the tilt had started to fail and the weight of the canvas resulted in many tears. The old, heavy hessian repair patches were all removed and replaced with thin calico. Ph-neutral PVA was used to adhere calico to canvas, and the repairs were again colour-matched using acrylic paint.

It is a sobering thought that this magnificent wagon was already 70 years old when it arrived in Reading and, like all the collections carefully cared for since 1951, it has now spent an equal amount of time as a Museum artefact.

Further Information (online):

For information about the Miller's Wagon – [MERL 51/1295](#)

For more information about Codicote Mill – <http://www.codicotelocalhistorysociety.co.uk/codicote-mill.html>

The miller's wagon features briefly in this online exhibition – https://merl.reading.ac.uk/explore/online-exhibitions/farming12k/#transporting_goods

Find out more about the Museum's farm wagons – https://merl.reading.ac.uk/explore/online-exhibitions/farm_wagons/

For more information about the Frederick Crane Chemical Company see – https://www.gracesguide.co.uk/Frederick_Crane_Chemical_Co

Read more about The MERL's Our Country Lives project – <https://blogs.reading.ac.uk/merl/the-our-country-lives-project/>

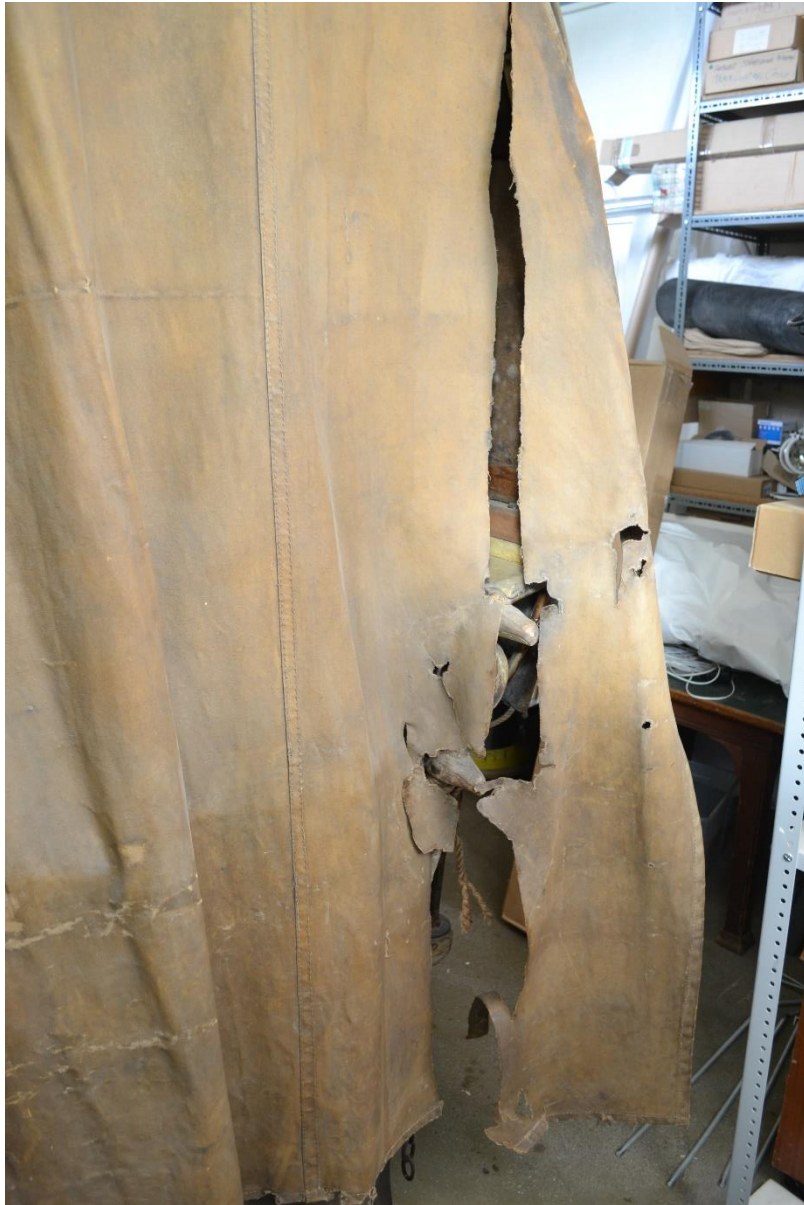
A few more images...



Fred hard at work removing dust from inside and using a board to spread the load (MERL 51/1295).



A typical shrinkage gap between felloes of the wheels, also showing old insect damage (MERL 51/1295).



One final shot of one of the major challenges that Fred faced when conserving the wagon as part of our recent *Our Country Lives* project. Thanks to his amazing efforts it is safe and sound once again for many more years to come (MERL 51/1295).